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RAILWAY AND COMMERCIAL GAZETTE
FORMING A COMPLETE RECORD OF THE PROCEEDINGS OF ALL PUBLIC COMPANIES.

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THE ATMOSPHERIC RAILWAY SYSTEM.

BY PROFESSOR VIGNOLES, C.E.

[On Tuesday week Professor Vignoles delivered the following lecture, "On the Atmospheric Railway," to a large and respectable assemblage, at the Royal Cornwall Polytechnic Society.]

The great interest felt in other parts of this country, and on the continent, respecting the very remarkable invention which had acquired the popular name of the "Atmospheric Railway," and the request of friends connected with Cornwall, who had imagined it might be of equal interest here, were the reasons for his presenting himself, a stranger to this district, and almost to every individual in the room. The very talented and ingenious gentleman who was, for a long time, the secretary of this society—Mr. Jordan—after the meeting of the British Association at Manchester, had requested him to send down here, for exhibition, the tables and drawings which now hung round the room.* He was happy that his engagements enabled him to attend and give some explanation of these, and to convey some information on the general subject. Though atmospheric railways had not sufficiently attracted the attention of the great mass of the public in general, they had made a deep impression on the minds of almost every man of science, and of most of the engineers who had investigated them. Indeed, this invention was one which, the more it was inquired into, the more its truth and importance became manifest. It was a subject too, which ought to be submitted to the most thorough scrutiny. If its principles were not true, or their application impracticable, it should be at once discarded; but if otherwise, the subject should be brought prominently before those who, it was presumed, would be benefited by it, in order that, if not themselves familiar with scientific arguments on which to ground their acquiescence, they might have the practical deductions set before them, and thus rendered easily intelligible. Mr. Vignoles, after some further preliminary observations, expressed his conviction, that the application of the atmospheric railway was the only means of securing railway communication either to Falmouth or Devonport. After some observations condemnatory of the lavish expenditure incurred in the construction of many railways, Mr. Vignoles proceeded to sketch the history of the invention of the atmospheric railway. It was nearly two centuries since a very ingenious engineer, of the name of Papin, conceived the idea of producing motion by means of atmospheric pressure. After him the idea seemed to have slumbered for more than a century, when arose Lewis, Medhurst, Vallance, Pinkus, and lastly Clegg. Vallance had indulged in some curious speculations; he conceived the project of travelling in a tube from London to Brighton, which, it might be remembered, created a great deal of ridicule at the time and since. Medhurst took a better view of the case; he saw that there was a very great objection to the passengers being placed, as it were, within the receiver of an air pump, and made the first step towards [illegible]

[illegible]

* [illegible]

degrees of vacuum, from one-fifth to one-half; and that, whatever this resistance may be, in any case, it will be proportionately less, as compared with the pressure, as the diameter of the tube is increased—the friction increasing simply as the diameter, the pressure as the sectional area; that the chief atmospheric leakage is at the longitudinal valve in the pipe, but that it will be the same for large pipes as for small ones; that the atmospheric principle seems to be well suited for such a line as the projected extension of the Dublin and Kingstown Railway, from the latter place to Dalkey." But having admitted all this, the commissioners appear to have been startled at the inevitable conclusions to be drawn from these facts, and they stated a number of objections, based not upon the experiments they themselves had made, but on certain preconceived opinions and assumptions of their own, and their report was, on the whole, calculated to create an impression unfavourable to the atmospheric railway with the superficial reader. Fortunately, the directors of the Dublin and Kingstown Railway were satisfied that so many admissions must be worth an experiment; they decided on making an application to Government for pecuniary assistance, which proved successful, and they were now making two miles of railway with 15-inch pipe, which would be in operation in six months from the present time; and he hoped to be able, at the next meeting of the Polytechnic, through their president, Sir Charles Lemon, to communicate the results. Should these be successful, of which Mr. Vignoles entertained no doubt, he need not say what must be the important practical consequences, particularly for this part of the country.

[To be concluded in our next.]

COLONIAL LAND COMPANIES.—No. III.

NEW ZEALAND—GEOLOGICAL FEATURES.

We last week gave a general notice of this colony, and again refer to it in respect to its geological features, which course we shall adopt whenever we can obtain authentic information of a nature like the present, as regards our other colonial possessions.

The geology of this colony has as yet been but little considered, the first attention of emigrants and others being, of course, turned to the capability of the soil for producing the necessaries of life. The chain of mountains which we before mentioned as stretching almost uninterruptedly from north to south, besides the vast quantity of iron and bituminous matter which it is known they contain, have, in their inmost recesses, a variety of minerals, which will amply repay future investigators for their researches. Shells, principally bivalves, are found in the outer soil of the highest mountains. Evidences of the volcanic origin of the country are everywhere abundant, more especially at some distance from the sea, and in many of the islands in the different bays. Off the Bay of Plenty is situated White Island, which is in continual eruption, the flames being plainly visible at dusk at many miles distant. The lava and scoria ejected from this volcano, which is of some magnitude, is borne by currents to the adjacent shores, and is used for polishing their weapons by the natives. All the islands in this bay have indisputable marks of recent ignition, sulphur, boiling springs, and obsidian, or volcanic glass, being found in all of them. Of the sulphur it is worthy of remark, that it contains much less dross than is generally the case with that found in European volcanic matter, the general proportion being above two-thirds of pure brimstone. Doubtless, in a few years, this substance will form a considerable article of export, and render England not so dependant upon Sicily for a supply of that essential article, as we have been informed that in New Zealand a considerable quantity could be prepared for exportation each year, at a very trifling cost; the colour is a brilliant yellow. In Mayor Island, situated about twenty miles north of Touraja, the mountain is of great elevation above the surrounding water of the bay, being principally composed of granite; obsidian is here very abundant. Three miles inland a series of widely extended plains present themselves, which are very much elevated above the coast. The principal one is called Roto Rua, the eastern boundary being studded with a number of boiling springs, which are in constant agitation, and small lakes of sulphur, bubbling up in thick masses, and disengaging mephitic vapours. For a space of above a mile in extent the ground is composed of bituminous matter, which is damp and fœtid, and so very infirm, that, in treading on many portions, the sound is reverberated. From the principal hot spring of Roto Rua a very heavy body of sulphureous steam arises, of an overpowering an odour that it is impossible to approach within a considerable distance of it. At Taupo, which is situated some days travel south-west from Roto Rua, a series of most extensive lakes, and boiling springs of great magnitude, are seen, which, relieved from the excessive sulphureous exhalations, allow of food being cooked in them without imparting any disagreeable flavour to it. The effects of violent volcanic eruptions are in no part of the country so evident as at Hauraki, in the River Thames, for, in the numerous islets situated beyond the frith, large and shapeless masses of granite are suspended vertically from the roofs of the caverns which abound in all these lonely and deserted isles, creating the wonder of the visitor that such enormous masses can hang by so slender a hold. In many parts piles of black ulcerated lava are found lying in wild confusion, forcibly attracting the thoughts of the spectator to the sublime and awful chaos presented by the earth previous to the Creation. Immense detached masses, torn by violent convulsions from their native beds, and by the elements worn into fantastic shapes, show the powerful agency which had been exerted by the extinguished volcanoes of former ages. Many of these islands present deep fissures, in some of which their walls descend perpendicularly to a depth varying from fifty to 300 feet, the sides of which beautifully expose the strata composing the land around, small pumice stones being scattered in all directions. The high mountain of Tongariro, situated nearly due north of Cape Palliser, the snow capped summit of which is visible at a great distance from many points, is still in constant ignition. Mount Egmont, the highest mountain in New Zealand, is situated at the north-west entrance of Cook's Straits, and was at one time the site of a most active volcano. The base of the hills in many districts is found to be formed of whinstone, the surface earth consisting of a stiff argillaceous mould, in part mixed with a white arenaceous marl, in which large pieces of chert are found when making excavations for wells. Large quantities of steatites are found in the country north of the Thames; it is a principal formation, found generally in a lamellated form, is easily divided into flakes, is of a soft friable nature, and, with the assistance of a crow-bar, large masses may be easily detached from the high rocks of that substance. In appearance it much resembles petrified argil, strongly tinted with iron oxide. A useful and easily-working sandstone is the foundation of the many sand hills which are found in various parts of the country. Coal is plentiful in the country, and in the River Thames district it has been found in abundance, and near the surface; its quality is represented as being very superior. Marcasite and bismuth are found in the interior, as also quarries of excellent slate. Quartz is also abundant, and syenite is met with in its usual bed of granite. Marbles of a most superior quality, and of various colours, are seen in large masses in many parts of the islands, and a tract of that valuable stone is situated in the district of the River Kawakawa. Freestone of various qualities is common to the country, and will, doubtless, be of great service to the colonists. Basalt rocks are often seen in various districts. Augite is found at Kororarika, and large pieces of jasper, both red and green, mostly of a square form, with the angles rounded by attrition, are constantly to be picked up on the sea coast. Small cornelians, variously coloured, but of inferior quality, are plentiful in the sand hills; and in some places, principally on the west coast, a metallic dust is abundant. Oxide of iron and protoxide of manganese is often met with in great plenty. Large indurated pieces of silica are seen in excavating clayey hills, as also a species of argillaceous calcareous geode, much resembling the well known terra sienna in appearance. Ironstone is abundant in various parts of the country; on the borders of a lake called Moamoa, situated a few miles inland from Tokomaru, peculiar stones are found, which are said to be meteoric; they are perfectly spherical, and studded with iron pyrites, varying in size from a pistol ball to that of a cannon, and are used by the natives instead of bullets, when ammunition fails. A mineral dust of the same nature is also found in the beds of the streams and rivers near this lake. Whole districts on either shore of the islands are found of cretaceous marl, or chalk. The green talc, or "pounamu," of which the natives, previous to the introduction of iron, made their hatchets and sundry ornaments, is found in the channel of a river lake in the interior, and, like flint, has whitish incrustation on its edges; when first dug from its bed it is soft, but, by exposure to the air, it becomes extremely hard. It is semi-transparent, and, when thin, has much the appearance of chrysolite. Fossils are very abundant, the island of E'Aiomawi containing great numbers of various sorts. On the shores fungites are often met with, and various dendrites. Petrifactions of the bones of large birds, supposed to be of wholly extinct species, are repeatedly turned up, and [illegible] and ostracites are found in various parts of the country and islands, both in deep swamps and on the highest elevations. These facts, as to the geology and mineralogy of New Zealand, have been collected with care from various works, and it is only to be regretted that these sources of future wealth and prosperity to this colony have not been more fully investigated. We shall be glad to insert any communication from parties who have had an opportunity of acquiring a knowledge of the country, and extracts from letters on this subject are requested.

ALCOHOL.—A paper from Messrs. de la Provostaye and Desains, on alcohol, was read, at the Paris Academy of Sciences, on the 13th ult., from which it appeared that, under the name of alcohol, are comprised a series of compounds whose properties resemble those of ordinary alcohol (spirits of wine). Several compounds have been recently classed in this series, such as the spirit of wood, the oil of potatoes, ethal, &c. Messrs. de la Provostaye and Desains announce that they have succeeded, after many fruitless attempts, in preparing with ethal and the sulphurate of carbon a combination corresponding with that obtained by M. Geise with the same compound and alcohol. This discovery is an interesting fact in the history of alcohol, and it required all the zeal and capacity of these gentlemen to isolate this unstable product from amongst the numerous substances which are formed in the re-action.

REVIEWS.

Guilty or not Guilty? London: J. G. F. and J. Rivington.

This pamphlet, which is anonymous, although ascribed to a Conservative Member of the House of Commons, whose lucubrations have appeared in another shape and at greater length, proposes, briefly, "to pass in review the acts of the House—to pronounce calmly and deliberately on its merits—and to ascertain how far it has performed its mission." With the question between the Conservative Member and the Minister, as to whether the latter has acted in accordance with the expectations of those by whom he was placed in power—whether he has lent himself to Whig measures or otherwise, it is not for us to interpose—our object being to confine our notice of this *brochure* to such parts as appear to bear on a subject treated upon in another column—the effects of the tariff on the mining industry of this country, and which we find briefly touched upon in its pages.

The writer, in speaking of the disappointment which the nation had been subjected to under the Whig administration, amongst other things, "with the neglect of native, and the preference given to foreign, labour, under the principle that the interest of the purchaser was paramount over that of the producer," observes, that, in placing the Tory party in power, the country "expected (in addition to other subjects receiving the attention of the Minister) further to see the energies and resources of Government directly applied to assist and provide for the great masses of men thrown out of employment by the inevitable rise of manufactures under a lengthened peace in foreign countries, and by the, perhaps, equally inevitable extension of machinery."—"On these terms," continues the writer, "and on these principles, the nation would have cheerfully submitted to the increase of taxation necessary for the relief and redemption of the manufacturing poor, and to the restrictions on the importation of food, as necessary to the continued well-being of the agricultural working men. They looked that *no prohibitory duties should be taken off, so as to throw into destitution any large bodies of men.*" These, we consider, in common with the writer, to be the true principles of Conservatism, if we understand the meaning of the phrase in its proper sense—that of preserving, and not destroying, correcting evils which exist, and giving to trade and commerce, as well as all other relations which bear upon our national prosperity, that liberal support which affords protection to the producer as well as to the consumer. However, the tide of free trade is now set in, and well be it for the country if it shakes not to the foundation those main supports of our internal wealth. It may suit certain classes to make England the emporium of the world, as they profess their measures are calculated to do, but, we apprehend, however London, Liverpool, Bristol, Gloucester, Swansea, and other ports, may benefit by rendering this country the medium of transit, the ruin will be perfect in the mining and agricultural, and we are not quite clear but even in the manufacturing districts. "How, then," asks the author of the pamphlet, "in this first session of the first Conservative Parliament, have their expectations been answered—their great hopes fulfilled?" And, after referring to the denial of any redress of the grievances under the Poor Law, and refusal on the part of Government to encourage emigration, he thus proceeds:—

An enhancement of the revenue in the most odious form, not for the great objects of the Conservative party, but actually to carry out the policy of the Liberals, *to lower by the admission of foreign copper the wages of the Cornish miners*, the choicest and most loyal part of our labouring population, and after a severe period of destitution, to leave them permanently reduced to a point little above the starving weavers. To aim a blow at the shoemakers, the growers of oats in Ireland, the millers; and half a dozen other industrial occupations, in order to benefit *the owners of South American copper mines; of Welsh smelting-houses*; the dandy wearers of French boots and shoes, and the keepers of large studs of horses. In one word, to encourage the tendency of capital to accumulate, of misery to become intense, which was feelingly and honestly deplored at the commencement of the session.

Such, indeed, we feel, as far as the working miner is concerned, not to advert to the mine adventurer, is too fearfully true a picture to allow of doubt. In the pamphlet of Mr. Basset, noticed in our last and present Numbers, that gentleman proudly points to our cotton trade, on which the following remarks of the writer whose pamphlet is under review—*Guilty or not Guilty?*—we think so pertinent, as to induce us to quote them:—

A few words on the folly of the cry for free trade from the manufacturers. They can undersell all European manufacturers of cotton cloths, and they point in triumph to India, to the cotton grown there, brought to England, worked up, and then re-exported to the land it grew in, but are they aware, or do they conceal, that all this is done with a protective duty of 30 per cent. *ad valorem*. That India has coal in abundance, that the labour of the apiest and most ingenious workmen in the world is there a mere drug; that the steam-engine and the cotton-factory have raised their unsightly bulk on the banks of the Ganges, and that were the differential duties done away with, and India treated as a portion of the empire, that she must draw to herself the capital and machinery of England, seize on the English market, and ruin the whole of the cotton manufacturers of this country.

The other portions of the pamphlet are taken up with the consideration of the measures to be adopted—the author having, at least to his own satisfaction, and, doubtless, to that of many of his readers and admirers, brought in a verdict of "Guilty," but, although sentence is recorded, judgment is deferred.

Income Tax Tables, Accompanied by a Variety of Statistical Information. By CHARLES M. WILLICH, Secretary and Actuary of the University Life Assurance Society. Longman, Brown, and Co.

These tables, however useful, have no attraction in their title to induce the public voluntarily to purchase them, any more than they would be disposed to pay the tax to which the tables are applicable, but, as we are not to discuss the merits of the measure, but of the work under review, we will at once proceed to describe its nature, awarding to its compiler that meed of praise due, for having, in so neat and comprehensive a manner, placed before the public who are in the enjoyment of 150*l.* per annum and upwards the advantages attendant on a "ready reckoner," while the information appended to the tables is matter of interest. From the latter we shall make a brief abstract, leaving to our readers to consult the tables in the interval afforded them before the visit of the commissioner or collector. It appears from Mr. Willich's little work, that it is provided by the 2d section of the Act imposing a "property and income tax," that no duty shall be charged lower than one penny, which, on reference to the tables, we find represents an income of 3*s.* 10½*d.*, at which they commence, reckoning at the rate of every one penny additional duty imposed up to 200*l.* per annum, which amounts to 5*l.* 16*s.* 8*d.*, and thus rendering the calculation easy. Beyond that sum it is carried at wider intervals up to 10,000*l.*, and may be said to be, as such tables should be, simple and comprehensive—indeed, it is a mere matter of figures, and to these Mr. W. has confined his book, with the exceptions already referred to. From them it appears, that in 1798, and in the subsequent Acts passed up to the present time, incomes under 60*l.* were except, and such as were between 60*l.* and 150*l.* were subjected to reduced scales of charge. In 1798 we find the charge imposed was 10 per cent.; in 1803, 5 per cent.; in 1805, 6¼ per cent.; and in 1806, until its repeal in 1816, 10 per cent.—the present charge imposed being 2*l.* 18*s.* 4*d.* per cent. The return of gross amounts raised by income and property tax in Great Britain, in 1804, at 5 per cent., was 3,878,890*l.*; in 1806, at 6¼ per cent., 6,145,260*l.*; in 1807, at 10 per cent., 10,131,344*l.*; in 1815, the maximum, 15,727,500*l.*; and in the year of its repeal, 1816, 13,276,871*l.* The estimate of the Minister of the present tax is 3,771,000*l.* It would be hard upon the author were we farther to extract from his pages, and, therefore, with a recommendation of his work to those whose interests may render it useful to consult, we leave it, with the observation, that it is "cheap at the price."

LONDON ELECTRICAL SOCIETY.

OCT. 18.—Mr. Phillips, a member, reported to the society the particulars of an accident by lightning near St Austell, when two out of five children, who had taken refuge in a toll-house, were killed. The point of interest in connection with this accident is, that the flash struck the very low building in which the little party had taken refuge, in preference to higher buildings in the immediate vicinity; in this respect bearing a close relationship to what occurred at the Fishmongers' Alms-houses, Newington, and a small cottage in Lambeth.—A translation by the secretary was then read of the commencement of M. Becquerel's researches on the electro-chemical properties of simple bodies. The author introduces his subject, by dwelling upon the importance of electro-chemistry, and takes occasion to introduce some very forcible arguments against the contact theory, of which we quote a most important one:—"When one substance acts on another, under the influence of light, electrical effects are produced, as in all chemical reactions, which effects are manifested so long as this influence remains. If it ceases to exist, there is no longer any sign of electricity, and, nevertheless, the contact of the newly-formed substances with the metallic plates still exists, and nothing is changed in the circuit." The author then enters on his task by describing the mode of assaying and operating upon gold ore, preliminary to showing not only in this, but in other operations with the said metal, the right and advantageous way of applying electro-chemistry. This portion of the subject was reserved for a future meeting.—A theoretical paper, by Mr. Proten, M.E.S., was then read, in which the author strives to show that the identity between electrical and chemical affinity is not yet established.—Mr. Walker's "Electro-Meteorological Register" for September, was then read.—The secretary announced that Walter Hawkins, Esq., M.E.S., &c., &c., had a third time endeavoured to obtain for the society a live specimen of the gymnotus, but had unfortunately failed. The animal had not survived the voyage; he has preserved it, dead though it be, and it is now in Mr. Letheby's hands for dissection.

There is a well of good fresh water, at Newton, near Porth Cawl, Glamorganshire, and within a quarter of a mile of the sea; but, strange to relate, when the tide is full the well is dry, and when the tide is out there are six or seven feet of water in it.

PROCEEDINGS OF PUBLIC COMPANIES.

BANK OF CEYLON.

The first general meeting of this corporation was held at the London Tavern, Bishopsgate-street, on Thursday, the 20th instant.

JAMES J. CUMMINS, Esq., in the chair.

The CHAIRMAN having read the advertisement convening the meeting, proceeded to read the report of the directors for the year ending 30th June:—

REPORT.

In the month of April, 1841, the directors of this bank addressed a circular to the proprietors, in which they stated that a Royal Charter of Incorporation had been obtained, and all preliminary matters concluded—that the manager and accountant had proceeded to Ceylon, and that the former, with the valuable and gratuitous assistance of H. J. Albrecht, Esq., a member of this court, was then engaged in making the necessary arrangements for commencing business at Colombo. The branch bank there was accordingly opened on the 1st of June following, and the directors have now the pleasure of laying before the proprietors a report of their proceedings, down to the 30th of June last, it having been determined that the books should be closed on the 31st of December and 30th June in each year.

No bank had previously existed in Ceylon, and the directors were prepared to find their progress impeded by those prejudices and doubts which always attend the introduction of a new institution into a small community; they were, however, fully convinced that such obstacles would speedily give way, as the growing commercial importance of Ceylon evidently required the aid of banking operations, and it only needed that the public should be satisfied that the Bank of Ceylon would be conducted on fair principles, and strictly confined to the objects of legitimate banking—not alone to remove such prejudices, but to attract to the institution itself the confidence and support of the commercial and general community. It gives the directors much satisfaction to state, that in this expectation they have not been in the least degree disappointed.

The prevalence of commercial distress, which has been experienced in our colonies, as well as at home, for the last few years, has had the effect of greatly restricting the general commerce of our Eastern possessions during the past year. With this also our bank, in its infancy, has had to contend, and the directors found that it would not be judicious, under such circumstances, to call up the capital as speedily as was at first intended. They, therefore, obtained the consent of her Majesty's Government to an extension of the time for paying up the whole of the capital for the period of three years, which will enable them to supply the bank with funds adequate to the progress of its business. It is very gratifying to the directors to be able to state, that not a single bad debt has attended the year's business. They cannot but regard this as a proof of the prudence with which the manager has discharged his important duties, and they have great pleasure in bearing testimony to the zeal and efficiency of himself and the accountant in the bank service since their appointment.

The directors have to announce the appointment of a local board at Colombo, consisting of gentlemen of the first respectability—viz., John Armitage, Esq., Henry Ritchie, Esq., and T. B. Norris, Esq., who are themselves proprietors of the bank; by their experience and judgment the manager will henceforward be aided, and under their constant superintendence he will conduct the affairs of the bank.

The directors feel bound to acknowledge the favourable disposition evinced, both at home and in the colony, by her Majesty's Government, towards the Bank of Ceylon. They feel that, without such fostering care, the bank could not have obtained the position it now occupies in the island, and they have uniformly impressed upon the manager their desire that he should, in all his proceedings, seek the sanction and approval of his Excellency the Governor and other authorities.

To meet the wishes expressed very generally in the community, the directors have sent out authority to Mr. Mackenzie and the local board at Colombo, to establish a branch at Kandy, under the management of Mr. Campbell, the late accountant. This branch will be situated in the centre of the chief coffee plantations, and prove a great convenience to the residents there.

By the result of the accounts the directors are enabled to declare a dividend at the rate of 6 per cent. for the year ending 30th June last, on the paid-up capital of the bank, and, upon the whole, they do not hesitate to congratulate the proprietors on the present position of the corporation. The directors proceed to submit the following statement of the accounts to the above-named period—viz., 30th of June, 1842:—

Net assets to June 30, 1842			£[illegible] 1 5
Paid-up capital in London	£[illegible] 0 0		
Ditto ditto in Ceylon	[illegible] 0 0	—[illegible] 0 0	
Net profit down to 30th June, 1842, after deducting all current expenses, a proportion of preliminary expenses, and rebate of interest on bills not due			[illegible] 1 5
			£[illegible] 1 5

The balance that will remain after payment of the dividend the directors propose to carry forward to the next year's accounts.

In reply to Dr. Bowring, the CHAIRMAN said that the amount of the bank's circulation in Ceylon was about 9000l., the notes being payable on demand.—A PROPRIETOR wished to know if the bank were in the habit of lending money upon the security of landed property?—The CHAIRMAN replied that the bank confined its business to the discounting of bills, the charter prohibiting any other than legitimate banking.—Dr. BOWRING recommended that, for the future, the reports should be circulated a short time previous to the meetings taking place—much good having resulted from that course being followed.—The CHAIRMAN stated he was willing to comply, if such should be the wish of the proprietors for the future, but no motion having been made the subject dropped.

In reply to a question from a proprietor, the CHAIRMAN stated that the preliminary expenses, including those of procuring the Royal Charter, were only 2350l., of which amount 425l. had been paid, and it was proposed to pay the whole in six years.—Mr. BROOKS then moved, and Mr. ROBINS seconded, the adoption of the report, which was put, and carried unanimously.

The CHAIRMAN then stated that, in addition to the impediments to their early progress, noticed in the report, many of the merchants of Ceylon had, for a considerable time, hesitated to open accounts with the bank, under the expectation that the Bank of Asia, then projected, would soon have an establishment on the island; he was, however, happy to say, that, with scarcely an exception, all the mercantile houses were customers of the bank. The branch at Kandy was about to be opened with the full sanction of the Government, which had ceased to grant bills on that place, having relinquished that business in favour of the bank.

Dr. BOWRING stated that the importance and usefulness of the directors had been shown in the report read that day, and, in a complimentary speech, proposed the cordial thanks of the meeting to them, which was carried unanimously.—Mr. HANKEY said the chairman had forgotten to state, that the directors did not intend to take any remuneration for their services previously to the 30th of last June, which announcement was received with much satisfaction.—The thanks of the meeting having been voted to the chairman, and responded to by him, the meeting then separated.

CLARENCE RAILWAY COMPANY.

On Saturday last an influential and highly respectable meeting of the shareholders of the above company was held at the Town Hall of Stockton-upon-Tees, to take into consideration the present position of the company, and to consider the proposal of raising the sum of 80,000l. to pay off the debt now owing to the Exchequer Loan Commissioners, as well as to confirm the resolutions passed at the special general meeting of the proprietors held at the George and Vulture Tavern, London, on the 12th inst.

HENRY VANSITTART, Esq., in the chair.

The CHAIRMAN, in opening the business of the meeting, stated the peculiar circumstances in which the company was placed, the railway having passed into the hands of the Exchequer Loan Commissioners, who had given notice to the company of their determination of selling the whole of the property, either by public auction or otherwise, in November next, in order to repay to the Government the sum advanced towards the undertaking, amounting, together with the accruing interest thereon, to 113,000l.; the directors had, on mature reflection, come to the resolution of using their utmost exertions of preventing the sale of so valuable a property; a committee of management had consequently been appointed, who had called a meeting of the shareholders resident in London, to consult and devise the best means of preventing the railway from being brought into the market, and to preserve to the shareholders at large a property which, from its progressive improvement, was eventually sure to yield to the share and bondholders a handsome remunerating profit for the outlay of capital. The undertaking had met with the most strenuous opposition from interested parties, and very unfair and prejudicial statements had gone abroad relative to the affairs of the company.—The result of the meeting in London was, that several resolutions were adopted, which would be read to the gentlemen present. At this meeting Henry Blanchard, Esq., presided; the resolutions proposed and carried were—that in the plan proposed for raising the money referred to in the printed letter, then read, dated 4th October, authorised the requisite steps being taken to procure the money—that the amount so received for the new shares be paid into the Bank of England, to the credit of the chairman, G. W. Rowley, and W. A. Shaw, Esqrs., to be applied by them for the purposes for which it was raised—the interest to be payable from the day of payment into the Bank—a letter, to be addressed to the shareholders, acquainting them of the resolutions agreed to, and affording them an opportunity of taking their preferable shares on or before the 20th inst., forwarding a deposit of 2l. per share, or a larger amount, if they think proper, to the secretary—the remaining resolutions were votes of thanks to the committee of management, the chairman, and Mr. Rowley, for their great zeal and unremitting labour and attention used on behalf of the proprietors. The above were the resolutions passed in London at the meeting over which Mr. Blanchard presided; 80,000l. were immediately required, otherwise it would be impossible to prevent the sale. The meeting would be glad to learn that, out of this sum, 61,000l. had already been subscribed in London, and it was now for the gentlemen and shareholders in the county of Durham to say what number of preferable shares they were disposed to take, and how much they might feel willing to deposit beyond the 2l. per share. To show the improving state of the railway, it was only requisite to exhibit the amount received for traffic and passengers in the months of August 1840, 1841, and 1842. In 1840 the amount received was [illegible]l.; in 1841 the sum amounted to [illegible]l.; whilst in the present year of the same month the return was [illegible]l., and September and October would show a still further increase, and there could not be the slightest doubt, if properly managed, the revenue of the company would be greatly augmented.—A full and explicit statement of the affairs of the company was then laid before the meeting, in which it was stated that the surplus revenue of the last three years had been employed in completing various parts of the line, discharging the floating debt incurred, and, if the proposed new shares were now all taken, that at Christmas next the company would get rid of the floating debt altogether. In the year 1843 the company would be in the receipt of an additional 7000l. per annum to their income, from the works of the new collieries, whilst their surplus would be 17,000l. This surplus would go to pay the 6 per cent. on the preferable shares, also the 5 per cent. on the 7250 shares created by the conversion of the bond, and the balance will be divided among the 3000 original shares of the company.

A long discussion ensued as to the future prospects of the company, and as to what number of proprietors were likely to pay up their shares in full, and whether there was a probability of all the preferable shares being taken up, and other monetary matters of the company, when the statement made to the shareholders assembled was deemed explicit and satisfactory.

ROBERT APPLEBY, Esq. (of Roseville) moved, and ROBERT KAYSON, Esq., seconded, a resolution to the effect—"That this meeting will use their best endeavours to raise the requisite sum of money immediately, by taking the preferable new shares in order to pay the Loan Commissioners the sum advanced to the company by Government, it being highly expedient that the company should repossess themselves of the railway, nor suffer the property to be passed from their hands, and lost by sale."—The resolution was carried unanimously, and 8000l. was subscribed on the spot. Other resolutions were passed, confirming and approving of the proceedings of the meeting held in London.—A vote of thanks was given to the chairman, and the meeting separated.

[We believe there is not the slightest doubt of the whole of the money being subscribed, and that the railway will be retained in the hands of the company, so that the novel sale of a railway by auction will be prevented by the payment of 80,000l. to the Loan Commissioners' debt by the 1st of November next.]

WEST LONDON RAILWAY COMPANY.

At a special meeting of this company, held at the offices, 11, Abchurch-lane, on Friday, the 21st inst., after some opposition on the part of Mr. White and his son—the former of whom moved, and the latter seconded, an amendment to the first resolution, to the effect that 25,000l. should be raised by preference shares, instead of 32,000l., as proposed by the directors, and agreed to by the creditors. A series of resolutions were carried, confirming the raising of a new capital, by the issue of new shares.—Lord KENSINGTON then moved the thanks of the meeting to the chairman, who, having returned thanks, the meeting adjourned.

NORTHAMPTONSHIRE BANKING COMPANY.

The sixth annual meeting of the proprietors was held on Thursday week, at the Angel Hotel, Northampton, Mr. JOHN PHIPPS, in the chair.—The report of the directors having been read, a dividend at the rate of 5 per cent., without deduction for income tax, was declared, and after providing for bad debts, the balance of undivided profits upon the year, amounting to 1237l. 18s. 9d., was carried to the reserved fund.—William Watkins, Esq., and Richard Hall, Esq., were then re-elected as directors, and the meeting separated.

CHANTER AND CO.'S PATENT FURNACES.

The following report on Messrs. Chanter and Co.'s furnaces has been forwarded us by a correspondent, requesting its publicity through our columns; we have not had an opportunity of visiting Messrs. Learmouths and Roberts' works, and personally examining the working of the furnaces, but, from the favourable accounts we have heard, are disposed to attach credit to Mr. Thomas' report.

[COPY.]

Having been requested to make my report of the effects of Chanter and Co.'s Patent Furnaces, which have been fixed to our steam-boilers, under a guarantee to save fuel, and consume smoke, I have been particularly careful in my observations, and have worked them several days myself. The first, applied to our 20-horse boiler (working 20lbs. to the square inch), was fixed the first week in June, which was kept constantly in work until the end of August, and tested against the adjoining boiler of the same size, with the old plan, and doing the same work. The furnace on the old plan consumed 18 cwt.; the patent one did not exceed 15 cwt., producing a more regular and powerful supply of steam, and retaining the same with the greatest regularity and ease, and consuming the smoke at least eight-tenths.

I would observe, that I weighed the coals myself, for several successive days, and worked each day thirteen hours; these points I have been most particular to ascertain, having been strongly impressed at the early period that less steam was obtained by Mr. Chanter's plan, but experience now convinces me that his patent effects the desired object, of obtaining more steam with less coals, and the smoke so much reduced that it can no longer be considered a nuisance; and I am quite of opinion that the operation of the fire, and Mr. Chanter's plan of burning smoke, can have no more injurious effect on the boilers than the ordinary mode. We have fixed a second boiler on the patent principle in the last month.

EDWARD THOMAS, Engineer at Messrs. Learmouths & Roberts'.

Page's Walk, Bermondsey, Oct. 4, 1842.

We believe this statement to be correct, LEARMOUTHS AND ROBERTS.

October 6.

MINING NOTICES.

[Under this head we purpose collecting such paragraphs as may appear in the provincial and other Journals, having reference to discoveries and improvements in mining operations at home and abroad. It is hardly necessary to observe, that we must not be considered to admit the correctness of the information conveyed, which, in too many instances, requires cautious investigation—the sanguine expectations of parties in some instances, and the want of honesty in others, throwing a degree of responsibility on a Journal in giving publicity to reports, which we do not intend taking upon ourselves.]

MOUNT VERNON COPPER MINE, JAMAICA.—Dr. Arnold, in communicating to the *Jamaica Royal Gazette* a report on this mine, says—"The district which was visited by myself, a few days ago, abounds with copper to a great extent, and at the foot of the chain of hills, where the Mount Vernon Mining Establishment has fixed upon for working the ore, a small, but ample, supply of water is found. The whole of the rocks in the neighbourhood of Mount Vernon are metalliferous, and at once point out the capabilities as a mining district. The whole surface of the south-west range of hills is covered with copper ore in a variety of shape and quality—this range of hills presents to the eye oblique beds of laminated stone, of sedimentary origin, filled with fissures, charged with metalliferous matter. It is very evident that the whole mountain range is richly impregnated with copper of great purity; it is intersected from the summit to the base with veins of metal in the character of sulphates, green and blue carbonates of copper intermixed with sandstone, limestone, and quartz. Three horizontal galleries have been cut at the following scale of distances from each other:—The first is called Drew's Gallery, which has been pierced 100 feet due west, which has cut through the veins as they dipped towards the north; the second is called Elias's Gallery, which runs into the interior of the rock 150 feet south-west; the third is called Clara's Gallery, a little above, and to the eastward of the other two—this is cut six degrees west of north, and runs about ninety feet. A few feet above the Elias and Drew Galleries ventilating holes have been cut; above the Clara Gallery an immense stratified rock lifts up its gigantic head, the whole of which appears covered with green carbonate of copper; iron pyrites did not abound. This yellow oxide of iron we saw in the two other galleries, but I should say that there is, comparatively speaking, a far greater per centage of copper than of any other metallic ore. The Elias Gallery appeared to abound in a species of ore, called by the miners 'gozzan.'"

EPITAPH ON AN ENGINEER, IN BROMSGROVE CHURCH-YARD, WORCESTERSHIRE.

My engine now is cold and still,
No water does my boiler fill;
My coke affords its flame no more,
My days of usefulness are o'er;
My wheels deny their noted speed,
No more my guiding hands they heed;
My whistle, too, has lost its tone,
Its shrill and thrilling sounds are gone;
My valves are now thrown open wide,
My flanges all refuse to guide;
My clacks, also, tho' once so strong,
Refuse to aid the busy throng;
No more I feel each urging breath,
My steam is now condensed in death.
Life's railway's o'er, each station's past,
In death I'm stopp'd, and rest at last.
Farewell, dear friends, and cease to weep,
In Christ I'm safe—in him I sleep.

GLOOMY PROSPECTS OF THE IRON TRADE.—The October series of ironmasters' quarterly meetings are just ended. Gloomy and dull as the season they have been; the business done has been comparatively trifling, and the future prospects of the trade are disheartening in the extreme. Consequent on the late stoppage of the works, a rise on the then extremely low price of iron of 1l. per ton was attempted, and, in many instances, paid, but prices have again receded, and the attempt to maintain in the current quarter a rise of 10s. will, no doubt, prove abortive. The demand created by the stoppage of the works is supplied, and the orders now issued will only be for such quantities as are required for immediate use; what this will be may be inferred from the fact that the chain and trace trade is nearly at a stand still, while the demand for rails is daily decreasing. Some idea may be formed of the extent of the reduction in the make of iron, from the fact that one work, which has usually paid from 1500l. to 1800l. for carriage per quarter, has not incurred an expense of 70l. on the same account in the one just ended.—*Worcester Chronicle.*

ROYAL CORNWALL POLYTECHNIC SOCIETY.

We this week make the following selections from the interesting transactions at the late meeting of this institution, a notice of which appeared in our last Journal:—

ELECTRICAL CURRENTS IN MINERAL VEINS.—Mr. HUNT addressed some observations on this subject. Twelve months since this society had granted a sum of money for the purpose of pursuing a series of experiments on electricity manifested by mineral veins. These researches were intrusted to his care, and the observations he had been able to make were fully corroborative of his former results. Three or four sets of experiments had been tried on mines between Camborne and Redruth, at East Wheal Crofty, East Pool, and Dolcoath. The result had been the same as found in the experiments previously tried and published in this society's Ninth Report—that the direction of a current, where the mineral lode dipped to the south, had been universally from west to east. One set of experiments tried at East Wheal Crofty appeared to be exceedingly interesting. The connection being made between two lodes running east and west, one dipping to the south, the other to the north, the current was from east to west, or from the south lode to the north lode. The connection being made between the upper part of the north lode, the current was from below to the surface. But in the south lode, the direction of the current was from the surface downwards, thereby completely verifying the opinion long entertained by Mr. Robert Were Fox, that north and south lodes have, at certain depths in the earth, some connection with each other, and that an established current of electricity is made between them. He would now state another interesting experiment tried at Dolcoath—the rather interesting from some circumstances connected with the lode on which it was tried. The current in this case was from east to west on a lode dipping to the north, and a cross-course intersected this lode; and on the eastern side upon this cross-course the lode was found extremely rich in purple copper ore, and surrounded with a great quantity of peroxide of iron, while at no part to the west of the cross-course was anything but yellow ore discovered. This was abundantly corroborative of the experiments formerly tried, in the first instance by Mr. Fox—the conversion of yellow ore into grey ore, by the simple agency of the electric current. In the laboratory it was found that, with the double sulphuret of copper and iron, iron was set free as a peroxide, proceeding to the positive pole, and is there deposited, while the sulphur uniting with oxygen was converted into sulphuric acid, and set free. They found this peculiar circumstance most fully borne out in this lode at Dolcoath. Mr. Hunt concluded, by expressing a hope that within the next few months a most extensive series of experiments would be tried in different parts of the county; and he hoped, at another time, to bring before this society many interesting results connected with this subject, which was of high importance to the mining interest on the score of practical value, as it was also in a philosophical point of view.—Sir C. LEMON, in proposing thanks to Mr. Hunt, said he was sure the meeting would agree with him, that the sum of 10l. voted last year had been well expended. Several new facts had come out of the experiments pursued, and he hoped next year these experiments would be prosecuted to a farther extent.

MINING IN GERMANY.—R. TAYLOR, Esq., read a letter from his father, John Taylor, Esq., containing some results of his observations on mining in the Hartz Mountains. It stated that the machines there in use for raising and lowering miners continued to answer their purpose satisfactorily. Mr. Taylor had seen one of these machines, which appeared to him inferior to that erecting at Tresavean, the platforms on which the men stand being too small, and the iron loops for holding by not conveniently arranged. The stroke of the rods was also much shorter than that proposed to be adopted in Loam's machine. For one of the machines of great depth it had been attempted to strengthen the timber rods with wire rope; but it was found that wire rope, in a state of rest, soon oxidates. Mr. Taylor had suggested a means of preventing the oxidation, by coating the iron with zinc, in the same way as iron is covered with tin in the manufacture of tin plates. Mr. Taylor next alluded to the fact, that the principle on which machines for raising men from mines had been constructed, was suggested almost contemporaneously in Germany and Cornwall, without any communication between the inventors. In Germany, the invention originated with an individual who, in contemplating the alternate motion of the two pump-rods, which are always employed in their shafts when the power is derived from water-wheels, saw that a body moving from the one rod to the other would be carried upwards or downwards according as the direction of this motion from the one to the other was managed. In the mines of the Hartz nothing engaged Mr. Taylor's attention more than the universal employment of wire ropes for drawing the ores and waste from underground. The merit of this invention is due to Mr. Albert, the able and enlightened principal officer of the mining administration of Clausthal; and the first information respecting the use of the wire ropes afforded to the English miner was by Count Breuner, of Hungary, in a paper which he communicated to the British Association at Newcastle, in 1838. The mines in the Hartz are very deep, the stuff is drawn by water-engines mostly constructed with double bucket wheels, and often at some distance from the shafts; the kibbles are large and heavy, and these are everywhere raised by wire ropes. The saving of expense, when compared with hempen ropes, is stated to be very great. The ropes Mr. Taylor saw were made of twelve wires, but for great depths the upper part was somewhat stronger. The pullies over the shaft are seven or eight feet in diameter. Mr. Taylor does not consider it a fair trial of wire ropes to work them over pullies of much smaller diameter. He was, however, surprised when visiting some iron works, to find wire ropes on cranes in the foundries, and in machines for raising iron ores perpendicularly in tram waggons to the top of high furnaces. In these cases, the barrels on which the ropes wound, and the pullies over which they worked, were necessarily very small in diameter, yet they seemed to be as pliant as need be, and to have sustained no injury in use. For such purpose the ropes were formed of a greater number of smaller wires, so as to endure bending to a very acute angle.

MACHINE FOR MEASURING THE VELOCITY OF THE PISTON.—This ingenious machine, the invention of the late Capt. Tregaskis, was explained by Mr. Phillips, of Tuckingmill. Its necessity arose from the fact of the piston moving with variable speed. Ranged round the inside of a circular box were fourteen compartments which passed under a stream of sand flowing through a small hole in the bottom of an inverted cone, as sand in an hour-glass. These being connected by a cord with the piston, the whole fourteen would receive a share of the falling sand, in proportion to the rapidity of its movement beneath it; and it was only necessary to weigh the deposits of sand to ascertain the comparative velocities, the velocity being, of course, in an inverse ratio to the weight of sand. Thus, as the piston at first moves slowly, the first compartment will receive the largest quantity of sand. The greatest velocity seemed to be at the point of time at which the fourth compartment passed; and the least velocity at the last, the motion beginning to be retarded at the sixth division.

MODEL OF A CROSSE MILL.—Crease is so difficult to stamp, that, in this county, where no hard capel can be had, the price for stamping it is from 7l. 10s. to 10l. per 100 sacks; but in districts where capel can be obtained, the process is not so slow, when about fifty sacks of it are added to 100 sacks of crease. The inventor, therefore, imagined that a moderate sized mill of the proposed construction, say about eight feet in diameter, with suitable proportions, and without a mixture of hard tin[illegible] stuff, will pulverise more crease in a week than the common stamps could possibly stamp in a month. To all who had seen samples bruised on shovels, it must be evident that rubbing is much better than pounding, after it is reduced as low as crease. Therefore the stuff in this mill is to be rubbed or ground with a number of pulverisers or segments revolving in a crease, the whole weight of which is to be from a ton upwards. These are placed near each other with rubbing edges at the bottom, in order to increase the agitation, and to prevent the stuff from rising in the water ere it is properly pulverised. The pulverisers are to be sufficiently apart to take in and leave out the stuff, and are jointed in order to prevent accident in case a large stone should enter the mill, and thereby cause an unevenness in the revolution. The crease is so constructed as to increase the velocity of the pulverisers and prevent needless friction, by means of the middle being filled up. The [illegible], attached to upright beams, are merely to make an eddy and flood in the water, since the pulverisers are drawn and not lifted. The stuff, therefore, may be sized in proportion to the rising or lowering of the flosset, or by means of a larger or smaller stream of water being admitted. The mill may be attached to a steam-stamps, or to a water-wheel, &c., since the gear is constructed precisely the same as that of the common stamping-mill. This model was from Mr. John Davies, St. Just, Penzance.

LINGARD'S THEORY OF DRY-ROT.—A paper upon this important subject was read on Thursday last before a crowded audience, in the theatre of the Royal Polytechnic Institution, by Dr. Ryan, the professor of chemistry. Mr. Lingard's views of the origin of fungous excrescences in timber differ very materially from those commonly received; he ascribes the decay of timber, and the development of fungi, to the presence of heat and moisture, and as water under increments of heat expands to more than 1/[illegible] times its bulk, so portions of timber under the same agency expand into various forms. Thus fungi are only portions of timber, whose situation of existence has, in a great measure, been extended, and are not the result of seed. Mr. Lingard further states that all fungi take the peculiar form of the tree from portions of whose timber they spring. Mr. Lingard's means of preventing dry-rot consists in expelling moisture from the timber, and filling its pores with a composition known only to himself, which effectually prevents the action of moisture. The lecture was illustrated by a series of beautiful diagrams.

THE LONDON GAZETTE—BANKRUPTS.

TUESDAY.—E. F. and R. Fennell, Aldermanbury Postern, warehousemen—J. Coats, St. John street, draper—T. G. Martin, Great Winchester street, wine merchant—C. Allen, Bovinger, cattle dealer—W. Hall, Tredington, Worcestershire, and R. Balshaw, Stratford upon Avon, corn merchants—W. Pugh, Bristol, cabinet maker—W. Gorsuch, Liverpool, hotel keeper—J. C. Rawdon, Leeds and Hoddersfield, wool merchant—H. Barton, jun., Liverpool, merchant.

FRIDAY.—W. Staris, Cutler street, Houndsditch, carpenter—M. Harris and S. A. Hart, Cullum street, Fenchurch street, merchants—D. Brandon, Beech street, Barbican, shoe manufacturer—C. O'Neil, Newman street, Oxford street, picture dealer—S. Simpson, Southampton, watchmaker—W. Bosworth, Wellingborough, Northamptonshire, confectioner—J. Cooper, Liverpool, provision dealer—H. Barton, jun., Liverpool, merchant—W. East, Spalding, Lincolnshire, builder.

PUBLIC COMPANIES.

MEETINGS.

De Dunstanville Mining Company	76, Birchin-lane	Oct. 25	2.
Tamar Silver-Lead Mining Co.	Office, 44, Ploubury square	27	2.
Rio de Amor Gold Stream Works	George and Vulture Tavern	31	1.
West Middlesex Water Works	Office, New road, Marylebone	Nov. 1	11.
Vauxhall Bridge Company	George and Vulture Tavern	3	1.
Grand Union Canal	20, Surrey street, Strand	7	11.

CALLS.

Royal Mail Steam-Packet Co.	10l. per share	Nov. 1 Roberts, Curtis, & Co.

DIVIDENDS.

Ulster Railway Company	9s. per share	Nov. —
South Caradon Mining Co.	12l. 10s. per share, East Cornwal Bank	—

NOTICES TO CORRESPONDENTS.

The Mining Journal is regularly published about Two o'clock on Saturday afternoon, at the office, 1, Crane court, Fleet street, where it can always be obtained, and there is no cause for irregularity in its supply, in town, other than neglect on the part of the agent through whom it is ordered; but, as regards its transmission to country subscribers, the blame is shared with the Post office authorities.

THE SILVER QUESTION.—The letter of Mr. C. W. Williams, which should have appeared in our advertising columns, will be found under the head of "Original Correspondence," the communication being addressed "to the Editor."

CORNWALL ROYAL GEOLOGICAL SOCIETY.—We are indebted to our contemporary, the *Cornwall Gazette*, for the early transmission of a copy of his very copious report of the proceedings at the meeting of this society, but the preoccupation of our columns prevents it being availed of.

We have to acknowledge the receipt of several Jamaica papers, with information respecting the Mount Vernon Mining Company.

THE MINING JOURNAL,
Railway and Commercial Gazette.

LONDON, OCTOBER 22, 1842.

Having, in the last three Numbers, noticed the pamphlet of Mr. BASSET, and endeavoured not only to establish the correctness of the grounds on which we ever opposed the Tariff, as affecting the mines of this country, by the introduction of foreign copper into our home market, and at the same time to point out those anomalies which appeared to us to prevail throughout its pages, we now resume the subject—the importance of which can alone be pleaded by us as an apology for the space occupied—the discussion, alas! coming now too late, were argument of use, or facts taken, as conclusive evidence—which, we regret to say, was not the case when the question was under the consideration of Government. Had Mr. BASSET at that moment published his "observations," he would have done some "service to the state;" his "observations" would, doubtless, have called forth remarks and comments, when the fallacy of the arguments brought forward by that gentleman would have been established, and his statements refuted; but now that the time has gone by when any benefit can be calculated upon by a discussion of this nature, it would appear almost a waste of space—were it not right that Mr. BASSET's observations should not be assumed, in the absence of any reply, as conclusive.

"The greatest danger to be feared is from the importation of the poorer ores." Such are Mr. BASSET's words; and yet that gentleman commends the prudence of the Minister in adopting a sliding scale, which gives encouragement to the import of "the poorer ores," from which "the greatest danger is to be feared."

"But (says Mr. BASSET) may we not, by imposing, or retaining, a high rate of duty on copper ore brought into this country, compel the importers, many of whom have English capital at command, and English energy and intelligence to direct the application of it, to try whether they cannot dispense with our labour in the smelting as well as in the manufacturing it?" We admit, by adopting such a course, we should have compelled the importers to seek another field, where they might carry on smelting operations—that is, provided the duty we imposed was so high as to render it a prohibition to the admission of foreign ore, and that other countries would afford them facilities for smelting their ore on terms more advantageous than England.

It will, however, be recollected that the deputations who waited on the Minister entered fully into this question, and clearly demonstrated that a protective duty of 5*l.* 10*s.* would not "compel the importers" to seek abroad for those facilities and advantages which this country affords, it being acknowledged that such were not to be acquired, while the extra freight and insurance on the metallic copper to our home market would, at least, have been an additional protection, the importer or raiser of foreign ores being subjected to an extra charge of at least 4*l.* 10*s.* per ton on his copper smelted abroad? It should also be remembered, that the calculations were made on the assumption that parties were to be found who would take their capital to Belgium or elsewhere, and erect smelting establishments for two or three mining companies, whose operations might be of a limited nature—who hereafter might think fit to erect works of their own, or avail themselves of those advantages in science, which we daily witness, by smelting their own ores on the spot. On the other hand, it is to be observed, we have works here already erected, capital already raised—that employed by Messrs. WILLIAMS and Messrs. VIVIAN and SONS, amounting to nearly a million sterling, not to advert to Messrs. PASCOE GRENFELL and SONS, SIMS, NEVILL, DRUCE, and Co., and the MINERS' COMPANY. In this country, where we possess more than ordinary facilities, with a vast coal-field, established works, ready access, and ample capital, we may defy other countries competing with us on anything like equal terms—in that constituted our safety, and formed the groundwork on which we upheld the working miner, without, in any degree, by our advocacy of his interests, detracted from the claims which Mr. BASSET sets up for the smelter and manufacturer.

Mr. BASSET inquires, "whether we should not, by a superior and enlightened policy, endeavour to secure to ourselves the advantages to be derived from both these operations combined, rather than live to see, by a stubborn opposition to all abatement—as we inevitably should see—foreign copper, both wrought and unwrought, brought to this country at a price much below that at which we could supply it ourselves?" We must confess we do not see the force of Mr. BASSET's argument. He says that if we do not let in the foreign ore to be smelted here, by removing or abating the former duties, it will come into this country in the shape of wrought and unwrought copper under the old duties, "much below that at which we could supply it." This is to tell us, that, with a protective, or that which has been considered a prohibitory, duty, wrought and unwrought copper could come into this country and overwhelm us. To do this they would not only be subjected to the extra charge on smelting abroad, but to the old duty on metallic copper, and not copper *ore*, so that their profits must be enormous, and which, under any circumstances, if realised, must annihilate the mining interest of this country and the Sister Isle. Indeed, it is quite clear, that the foreign miner would have still continued to smelt his ore at a fixed rate of duty per ton on the copper smelted, provided that such duty did not exceed the difference which he would have paid elsewhere, not to advert, as we have already said, to the difficulty he would have found in obtaining equal facilities elsewhere for the accomplishment of his object. Mr. BASSET, in declaring himself to be "no free trader, either by birth or education," observes, "that no lords of mines have been more ready to assist the miners of my native county than the members of my family"—and none are there who are more willing than ourselves to admit the justice of the remark. The name of DE DUNSTANVILLE will ever be remembered with grateful and affectionate feelings by the working miner, as will, we feel assured, all those descended from or related to him; the best evidence that could be afforded of the high sense entertained by the county of the amiable qualities and the distinguished liberality of that esteemed nobleman, is to be found in the monument erected to his memory on Carn Brea, and the Charity which bears his name, and which will be handed down to posterity, as evidence of the regard in which he was held, and affording, as it does, an inducement to others to follow in his steps. We do not feel that any apology is necessary for thus diverting from the direct question, but we feel it a duty we owe to Mr. BASSET, not only so to express ourselves with respect to his revered relative, but also to avow our conviction, that no gentleman in the county is more deserving of being held in high estimation by others, from the lord of mines, the landholder, the mine adventurer, and the leaseholder, down to the working miner, the fisherman with his sean, and the agricultural labourer, than the writer of the pamphlet, whose character is too well known in his native county to call from us any eulogium on his merits. But, to return to the question.

We pass over the remarks on the sugar duties, and the result which may be calculated upon from Sir R. PEEL's liberal policy. We then approach the silk trade, which we are told is a *manufacture*, very highly protected up to 1825; the article then produced was poor—the prohibitory protection was withdrawn, and thence-forward the manufacture began to flourish;—in the same way broad-cloth, which was at one time highly protected, a similar result attended, encouragement being given to the English manufacture. The West India interest also is again brought under notice, and the use of the plough, instead of the hoe, put forward as one of the advantages realised by liberal measures. But, we would ask, what does all this prove? what is the real bearing of the argument adduced? Do we not import the silk as the raw material, while copper ore is the produce of our mines? Are we not indebted to other states than our own for wool, while our tin is a source of national wealth? and is the employment of machinery, such as the plough for the manual labour of the hoe, to be considered as a case in point? Were we to suppose it possible to get and raise the ore without manual labour, but dependant alone on machinery, our position would be far less strong, for although we might, even under such circumstances, advocate the application of English capital to our own mineral resources, yet we should not have that claim to consideration which we hold to be paramount to all others—viz., that of affording employment to an intelligent and laborious class, comprising the working miners of the United Kingdom. Mr. BASSET, in referring to broad cloth, contends that the English manufacturer, being forced to exert himself to compete with foreign products, did so successfully; but we would ask that gentleman in what manner we can improve our *ore*, so as to render it superior to foreign? To continue this line of argument it is necessary to recapitulate Mr. BASSET's words—"I might easily multiply these instances, but I have said enough, and trust to lead any unprejudiced mind to hope and expect that what has already happened in these will happen in the instance of all our Cornish mines, and, by a *better economy in our mining operations*, we may hope to see our produce obtained on *easier and less expensive terms*."

This, we submit, is a censure on the agent, the engineer, and the miner, although we can believe not intentional, for we believe that it is admitted on all sides, machinery is more perfect, agents are at least as intelligent, and the working part of the population as industrious, as in any part of her MAJESTY's dominions. Whence, then, are we to expect any reduction? Certainly only in the dues or royalty exacted, and we trust Mr. BASSET will convene a meeting of the lords of mines, and submit his proposition of raising ore "on easier and less expensive terms" to their consideration. We cannot doubt but that, seeing the working miner could not be "ground down" lower than he is, they would reduce their dues, as the only chance, for, we believe, engineers and agents do those duty, and are not too well paid.

Already have we so enlarged on the subject under discussion, that we feel it unnecessary to add more than an extract at the close of the pamphlet, in which Mr. BASSET states—"Had I been in Parliament, and given my support in favour of the Tariff, I should have done so on the reliance I place in the judgment of many practical men of business, who think 7*l.* 10*s.* a sufficient protecting duty for the purpose contemplated." How this expressed opinion agrees with those which precede it, in declaring the conviction of the writer that the Minister "has acted with prudence upon the principles of commercial freedom," we leave our readers to determine. A reference to the Tariff itself, and the encouragement afforded to the introduction of the poorer ores, will convince them that, had Mr. BASSET been in Parliament, he would have served the miner much more than under present circumstances his benefactions are calculated to do.

In thus expressing ourselves, on reviewing the pamphlet of Mr. BASSET, we have only to express our regret that we cannot arrive at the same conclusions which we have reason to believe actuated him in giving expression to his opinions. If that our language, at the eventful period of the Tariff being under consideration of Parliament, may be deemed as being "too strong," he must, at least, admit his arguments are "too weak" to support the Ministerial measure. In conclusion, we have only to express our sincere hope that he may be right—that we are wrong.

It is with regret we learn from the proceedings of the Geological Society of Cornwall that Government has afforded an additional proof, in an individual case, of want of sympathy with the mining interest—an interest which by them has not only been neglected, but wittingly injured by their acts. We refer to the case of W. J. HENWOOD, Esq., F.R.S., which we shall enter upon fully in our next—a gentleman, to whom the mining world is so considerably indebted, and who, for a number of years, has devoted his time and attention to the geological and mineralogical features of Cornwall.

We cannot better, perhaps, illustrate our remarks than by quoting the words of Mr. HENWOOD, on the occasion to which we refer:—

All Governments had treated the miner as their fair game, on whom they had a right to prey without the obligation of feeding him. His supplies are taxed, whilst his produce is unprotected. Scarcely a branch of productive industry but had its commissioners in foreign lands trying to discover improvements which might be beneficially adopted here. But nothing of the kind had been yet done for the miner.

It was on the representation of the late respected DAVIES GILBERT, Mr. PENDARVES, Mr. PRAED, and several other members of the Geological Society, that Mr. HENWOOD was nominated "Underground Surveyor of the Duchy Mines;" but we will not anticipate those comments which we propose making in our next week's Journal. Mr. HENWOOD is recognised by all as a zealous and industrious labourer in the field of geological and mineralogical science; his work, to which he has devoted the past fourteen years, is, we are glad to learn, in the press—perhaps earlier than the author could wish, for our belief was, as said by a friend, "that he would die in harness."

LECTURES ON GEOLOGICAL MINERALOGY.

BY J. TENNANT, ESQ., F.G.S.

On Wednesday, the 18th inst., Professor Tennant delivered his second lecture at the King's College. The Professor commenced by informing the students that Crystallography would be the subject of the lecture; he then explained the meaning of the word "crystallisation," stating that if salts were dissolved in certain solutions, and those solutions gradually cooled, crystals would appear, and take certain known forms, unless prevented or affected by secondary causes. One example of the action of secondary causes was shown in fibrous carbonate and sulphate of lime, which form it took instead of its true crystal, in consequence of the matter being confined, and freedom of motion prevented. Let a quantity of chloride of sodium, or common salt, be dissolved in pure water, and after evaporation the crystals would be cubes; but, if dissolved in some other solutions, the crystals would assume a new form. Several very beautiful specimens of different salts crystallised were handed round the room, as well as a fine specimen of bismuth, crystallised by art. The affinity of crystals for rough substances was alluded to, the Professor stating that if a solution of alum were placed in a glass vessel, and allowed to evaporate, and a rough substance, such as a piece of cinder, introduced, the crystals would not deposit themselves on the glass, but upon the cinder in preference. He stated that the property of crystallising was by no means confined to a small number of bodies; nearly all the different species of simple minerals, and some inorganic bodies, of vegetable and even animal origin—such as sugar, camphor, and spermaceti—had been in a crystallised state. Most of those substances are capable of exhibiting a variety of forms, and it is exceedingly probable that many other natural bodies, not hitherto observed in the state of crystals, would, under favourable circumstances, undergo a similar process. The limits prescribed by this introduction would not permit of many remarks on crystallisation as a chemical process. It was to be recollected that affinity was of two kinds—homogeneous and heterogeneous; the former of which unites particles of the same kind, the latter particles of different kinds. Now, it is evident that the production of a crystal depends on the action of homogeneous affinity. Light had great influence in crystallisation, as was exemplified by the camphor on the bottles in chemists' shops, which, as would be always seen, formed towards the light. Some salts would not combine in crystallisation, as, for instance, nitre and alum, for although the two were dissolved in the same vessel, yet, on evaporation, the nitre appeared in its own crystals, and the alum in its proper form. The distinguishing minerals by the form of the crystals was difficult, inasmuch as some of them (calcareous spar, for instance, which appears in a great variety of form) appeared in many forms, and many substances took the same crystal form; other methods had then to be called in, such as the degree of hardness. The following is the table at present recommended, but several gentlemen are now labouring to render it more perfect:—

TABLE OF HARDNESS.

1. Talc	23	6. Felspar	52
2. Gypsum	50	7. Quartz	26
3. Calc spar	71	8. Topaz	6
4. Fluor	33	9. Sapphire	1
5. Apatite	45	10. Diamond	1

Thus, 366 minerals can be distinguished by their hardness. To render the table explicable, it was necessary to explain, that the first figure, as No. 1, showed the degree of hardness of talc—there being twenty-three minerals which can be distinguished by its relative hardness, when compared with that mineral; of the second degree of hardness, as gypsum, there were ninety of the same hardness, and so on, but the student must be careful to distinguish between hardness and toughness. The Professor then entered at some length into the different systems of crystallography, very lucidly explaining the same—viz., the cube, the octahedron, and others belonging to the Tesselated System, but which it would be impossible to report without the accompaniment of the beautiful diagrams and models with which the lecture was exemplified.—[The next lecture will embrace specific gravity, electricity, magnetism, and use of the blowpipe.]

TREVAYEAN MINE.—We are authorised to state, that the machine for letting down and drawing up the miners will be quite ready to work on Saturday, the 29th inst.

FOUL AIR IN MINES.—Mr. Hardiman, the gentleman who made several experiments with Dr. Payerne in the diving-bell over the wreck of the *Royal George*, at Spithead, has been trying other experiments at the Royal Fulberton Consols Mines, in St. Agnes, with the newly-invented method of purifying the air. The experiment was made at a depth of about 700 feet below the surface, and where the air was previously so vitiated that no person could approach the place (a rise nine fathoms above the level), a powerful air machine attached to the engine rods was put to work some time ago, which barely furnished air for three men with candles to exist. The method of purifying air was brought into action after this air machine had been thrown out of use, and although there were at that time no less than fifteen men with candles in the rise, the air in the minutes was so renovated that all breathed with comparative ease; the improvement was even visible, inasmuch, that where three candles were until then with difficulty made to burn, ten or more now burned freely; as a further test, two holes were blasted, and, under the old method, no man could approach the top of the rise until half an hour after the explosion, and, in some cases, longer, but the machine so quickly dissipated the smoke that in four minutes the men were at their work, breathing as comparatively pure, and refreshed with the additional advantage of being as cool as at the surface, although there were, as before stated, fifteen men in the rise.

NEW YORK STEAMER "BRITISH QUEEN."—We are informed by the London agents of this steam-ship, that orders have been sent out to New York for her not to leave that port before the 10th to the 12th inst., instead of the regular day, the 7th—this being her last voyage this season. We are requested to make this announcement, in order to tranquillise the public mind, as she would, in the regular course, be due at Cowes about to-day, the 22d, whereas she is not to be expected for five or six days longer.

SALVAGE OF THE "TELEGRAPH."—We have been informed, on good authority, that the first attempt to weigh the wreck of this vessel was made on the 14th inst., which succeeded, the first resistance having been overcome, and the whole raised upwards of two feet. A deputy from Paris is on the spot, watching the progress of the work, and the Inspector of Customs has already prepared a place to deposit the expected treasure

ORIGINAL CORRESPONDENCE.

ORGANIC ORIGIN OF SLATE.

TO THE EDITOR OF THE MINING JOURNAL.

Sir,—In the *Mining Journal* of the 24th of September I read a short notice by a correspondent, with reference to an article published in one of the Quarterly Reviews, entitled "Scriptural Geology," detailing his discoveries of certain kinds of slate, being principally, or wholly composed of oceanic vegetable bodies. Every fact of this nature ought to be carefully treasured up by those who are ambitious to attain a right knowledge of Nature, and to step beyond the boundary marked out by those who see the beautiful and illimitable field before them, and yet dare not, without a recantation of past errors, venture to explore it. Every day adds a link to the chain of evidence, encircling the chain of natural results, proving that all the mineral kingdom originates in and by organic matter, uniting with, and being produced by, the elementary constituents of air and water. The facts mentioned by your correspondent may be disputed, but they are such as can be proved. Large beds of slate originate, in many instances, from depositions of almost exclusively oceanic vegetables, and these depositions forming among primary beds, covering ancient beaches, or primary oceanic soils, the causes of effects thus produced being still universally in action in numerous localities of the earth, particularly in the neighbourhood of the Cape de Verd Islands, the Red Sea, named by the Hebrews the Sea of Zuph, or Weeds, and on or near the shores of the great continents of the earth; local portions thereof being literally choaked up with sea weed, which in every storm is thrown up in vast heaps, either in the valleys and plains of the deep, on or among the reefs, or upon the shores. Vast accumulations of this kind on the shores of the Red Sea are always more or less blended with calcareous matter, and where, from overlying beds, lateral pressure takes place, the plants preserved from entire decomposition, by the abundance of salts contained in the beds, becoming compressed, gradually assume the lamellated texture, and, finally, become slate, of a species consonant to the nature of the material of which they are composed: thus, slate of varieties is formed. Still, with these facts before him, your correspondent must be careful of falling into the common error of generalising upon single phenomenon, however well supported by facts multiplied by facts.

Of the known mineral bodies none of them present greater varieties than the slate formations; they embrace every variety of shade and composition, and pass by transition into the limestones, porphyries, jaspers, and other rocks: they are sometimes highly charged with bitumen, denoting admixtures of animal matter: they are sometimes aluminous, almost wholly consisting of terrestrial vegetable matter, which has sometimes—as is evidenced by their peculiar appearance—been exposed to the long-continued action of sea water: sometimes both animal and vegetable matters, oceanic and terrestrial, are united, as in coal beds, beds of pyrites, and slate beds—the mineralisation of these bodies, and the ultimate change and nature of the consolidating body, depending on local affections of temperature and association: thus, in one instance, they become *slate*—in another instance, they become *slate coal*—in another, *bituminous coal*. Again, under other aspects, they become the recipients of silica, and subdivide into numerous species of the *silicates*, or they absorb alumine, or it is generated in the beds, and the ultimate results are equally variable, as aluminous bodies.

Professor Ehrenberg speaks of tripoli, or polishing slate, as being composed of minute infusoriæ, and hence, on this authority, it is said, such is the composition of tripoli. This is one illustrative proof of the bad effects of generalising, for tripoli, in truth, is as varied in its nature as slate—silica embracing animal and vegetable bodies without distinction, and the character of the mineral is either derived from the silicic bases or from the substances enclosed—which latter is the case when they are in excess, or possess peculiar mineral properties; many specimens of tripoli being procured, the naturalist, on close observation or analysis, will observe the wonderful difference in all of them, both in composition and character, for some will be found to consist of the shelly covering of molluscs in their state of decomposition, saturated *per se* with silicic acid; in others the matters therein contained are of animal, and sometimes of vegetable origin, and sometimes an union of both. Too much stress is laid on these individual discoveries, which, by-the-bye, are nothing but what has been familiarly known to myself, and, doubtless, to others, long before they were made public by Ehrenberg. Microscopic observations are not always infallible truths, and the system of generalising therefrom too often militates against the value of the discovery; the cellular texture by which these supposed discoveries are guided, is common to animal and vegetable species; and in the discoveries made by the same writer, of the composition of chalk, the error is readily detected, for chalk is not only composed of infusoria, but also of the comminated particles of the shells of large and small molluscs, of the bones, teeth, and fragments of animals of high organisation, and even of vegetables; and on examining these fossil remains, the same phenomena is manifest in all—that is, the cellular texture, pronounced with so much confidence to be infusoriæ. It would be well if geology, descending from its self-created pedestal, would ponder over these truths, for many of the uncertainties of science are produced by these sweeping conclusions, drawn, at times, from well-authenticated facts. The oolite formation, of the same origin as chalk, is often one mass of very minute shell-fish, merely united with material of the like composition, but numerous species of both oceanic animals and vegetables enter into its composition, and microscopic enlargement of the object may detect the cellular texture in almost all the consolidated bodies of the mineral kingdom: thus, cornelian has been pronounced an infusoria product—its base is silica, but its included compounds are various, embracing the larger species of molluscs, &c.; but still the discoverer of this fact is right, although his general conclusions are wrong.

Returning to the subject of slate; it is found generally covering, or in juxta-position with granite; and as granite is said to be a volcanic product, such is supposed to be the origin of schistus—but in whatever disposition this material is found—whatever may be its nature and properties—its origin is organic matter, and such is the origin of granite and all other crystalline rocks.

A Geologist.

Cambridge, Oct. 19.

TALACRE COAL AND IRON COMPANY.

TO THE EDITOR OF THE MINING JOURNAL.

Sir,—There is, in the very nature of fraud, a principle which, even antecedent to its execution, as well as during its progress, weighs the chances of success and the difficulties to be encountered, and provides for them by hedging round the imposition with every means of security that cunning device can command; nor have the arrangements and conducting of this company proved the exception to the rule, for here we find all the essentials of this principle so carried into practice, that plain and simple-minded honesty had no chance of discovering the deception, until too late to retrace its steps. If you are enabled to lay before your readers the whole of the transactions relative to the bills of Mr. Levason, together with the manner in which Mr. Howard, of Cheltenham, acquired an interest therein, the duplicity practised will be exhibited in perfection. This matter is now the great stumbling-block, but I entertain little doubt that, if you will give your advocacy, the mingled skein will be unravelled, and the actions of the persons concerned, and the motives by which they were actuated, laid bare to public view. To have a fair exposition of this may prove very useful to those who have been the victims of this particular deception—it will, at least, set them right with one or two of the Irish shareholders, who, while they have not the spirit to seek justice for themselves, are sufficiently magnanimous to blame them for bestowing a confidence, afterwards found to be undeserved. It will set at rest any question as to concealment by the solicitor, which had been so strongly repudiated in his affidavit, and show that he himself acted with a perfect knowledge of all the facts, and was equally aware that he was misleading his clients. The property having been purchased from Messrs. Levason and Baker, by Wood and others, the latter were bound to pay the amount; they do not do so, but, forming a company, sell the said property on different terms, so as to advantage themselves, but pay for their own purchase with the money of the shareholders, and, at the time Mr. Chapplow and his friends became directors, various amounts being still due from Wood (say upwards of 28,000*l.*), he, their solicitor, makes them believe that those monies are owing by the company. On the *first day* Chapplow attended the board a bill for 500*l.* was advised to be renewed, and subsequently others also; upon some of these Wood had previously been sued, and they were his own liabilities, but he permitted his unfortunate client to become responsible for them very bills—to be sued upon them, and his furniture to be sold to satisfy the judgment against him. He was defended by Wood, who, as you may suppose, Sir, was not so fortunate in defending his client as he was when the suit was against himself. In another case, of a precisely similar nature, and the result the same, the money was *borrowed*, hoping to avoid a prison, but, as the sequel proved, it was a vain hope—indeed, the inscription of the Italian over the gloomy regions, might not inappropriately be used by those cajoled into this company—"Whoever enters here leaves hope behind."

These transactions all relate to the bills given to Baker, and, though difficult to characterise in terms that befit the baseness practised, they are "trifles light as air," compared to the case in which I now claim your helping hand. To enter into this now would be occupying too much space in your valuable Journal—I trust to be favoured with a corner another week—I shall merely allude to the fact of concealment and deception (which has been so strenuously denied by *Alderman* Wood) being practised to such an extent, that on two different occasions returns were made by the secretary (W. Weston) to an order of the board, entered on the minutes of the company, for a correct statement of the pecuniary affairs of the company, with a view of arriving at a real knowledge of its difficulties; and in both those returns Mr. Levason is entered as a creditor of the company for 15,000*l.*, Wood being present, knowing that the debt was his own, yet never even objecting to the return as incorrect, much less declaring its falsehood. That no error may arise as to these returns, I have written to a friend to call upon you with them, so that the accuracy of the statement made to me may be ascertained by you before publishing.

Great Russell-street, Bloomsbury, Oct. 13. Argus.

[We have seen the accounts alluded to, and are satisfied of their correctness.]

MR. SAMUEL HALL'S PATENT CONDENSERS.

TO THE EDITOR OF THE MINING JOURNAL.

Sir,—In the last week's Number of your interesting Journal I am struck with two extraordinary statements respecting the merits of the above condensers. At page 333 you state as follows:—

"Hall's Condensers.—We are given to understand that Mr. Samuel Hall's condensers are now being applied by Messrs. Maudslay and Field to a pair of new engines, of 220-horse power, to her Majesty's steam-ship the *Black Eagle*, and also by Messrs. Seaward and Capel, to a pair of engines, of 560-horse power, to her Majesty's steam-frigate *Penelope*.

In your front page Mr. Charles Wye Williams advertises as follows:—

Thus the first fourteen years of my business life were passed in the best school of theoretical and practical chemistry and mechanics, while the last nineteen (as originator and manager of the Dublin Steam Company) have been devoted to the progress of steam navigation, and particularly to what belonged to engines, boilers, and furnaces. And here I may add, however harshly it may sound to Mr. Hall, that it was this very education, and not the "study of the law," which fortunately enabled me to foresee the practical disadvantages of his "patent steam-engine condensers," the unfortunate adoption of which, by the three directors of the St. George Steam Company (after paying Mr. Hall above 5000*l.*), produced by its ultimate failure (though at first it offered favourably) much inconvenience, and a loss of above 20,000*l.*, as stated to me by one of those directors. It was this education, and the experience it produced, which enabled me to steer clear of the plausibilities and syren inducements of Mr. Hall, and resist his importunities for the adoption of this very patent condenser.

Feeling interested in this important subject, I have made some inquiry how far your information is correct, and find it to be a fact, that Mr. Hall's condensers are at this moment being applied, as you state, to the Admiralty steam-ships, and by the engineers above-mentioned. The party of whom I inquired gave me the enclosed copy of a report made by Sir W. E. Parry and Messrs. Ewart and Lloyd upon Mr. Hall's condensers, which I think you will consider an interesting document to lay before the public, and a strong contradiction of Mr. Williams' statements.

London, Oct. 17. A Constant Reader.

[The report referred to we will endeavour to insert in our next, it being of too lengthy a nature to occupy space in our columns of this week. It is right, however, to observe, that it bears out the assertion of our correspondent. We are happy, at all times, to devote both space and attention to subjects of this nature, but we cannot be expected to occupy our columns by the insertion of matter interesting only to a portion of our readers.]

ON WATER-WHEELS.

TO THE EDITOR OF THE MINING JOURNAL.

Sir,—I beg to say that the calculations found in the *Practical Miner's Guide*, on folio 87, are as follow, viz.:—To find the power of the lever—$46 \div 2 = 23 - \frac{1}{23}$ or $3 = 20 \div 3 = 6{\cdot}66 \times 6250 = 41{,}625$. By this rule a 12 foot wheel will be—$12 \div 2 = 6 - \frac{1}{6}$ or $0{\cdot}78 = 5{\cdot}22 \div 3 = 1{\cdot}74 \times 1614 = 28{\cdot}08$, or from 23 to 24 per cent.

Wheal Lopes calculations are:—$12 \div 2 = 6 - 3$ (N B) $= 3 \div 3 = 1{\cdot}00 \times 1614 = 1614$, or from 13 to 14 per cent.

Surely, Sir, this is enough to convince any one in his right senses that the absurdity is not in the *Practical Miner's Guide*. I have calculated literally from the rule there given, and shall leave it to the intelligent readers of your valuable Journal to determine the value of Mr. Budge's rule for finding the power of water-wheels. P. V. W.

Carnarron, Oct. 17.

P.S.—I would recommend Mr. H. Penberthy (in offering his services to meet for a trial) to fix the standard at 30, as the offer might be more likely accepted than by naming the unprecedented rate of 50 per cent.

LAW OF PATENTS.

TO THE EDITOR OF THE MINING JOURNAL.

Sir,—Perceiving in your valuable Journal a letter from a correspondent, wishing to know what benefit can be derived from entering a caveat, I venture to enclose the following extract, from Messrs. Robertson and Co.'s *Instructions to Intending Patentees*, which appears to me to give all that can be said on the subject, in a few very simple and comprehensive words:—

You may enter a caveat at a small expense, but the protection it will afford you is very slight. It will entitle you to a notice of every application made for a patent likely to clash with that you contemplate taking out, in sufficient time to oppose it; but it will not give you any right of priority over the person so applying, unless you can show that he has stolen his plan from you—which it is seldom easy to do. When two parties appear to have hit on the same invention, independently the one of the other, the practice of the law officers of the Crown is to allow a patent to go out in favour of the two jointly.

Lionshouse, Oct. 19. Charles Fox.

[The "Instructions" have been transmitted us, and appear to be clear and comprehensive, but we have not yet had time to peruse them with the attention we could wish. A notice may appear in our next.]

DUTY OF CORNISH ENGINES—UNITED MINES.

TO THE EDITOR OF THE MINING JOURNAL.

Sir,—In your Cornish engine report of last week I observe Taylor's engine, United Mines, doing 107,494,580—Can you, or any of your numerous correspondents, inform me as to what improvements or advantages this engine has over others, the best of which are not doing more than 76,000,000, except Sims' combined cylinder, which the reports put forward ought to exceed all others! Diadw.

Oct. 18.

THE SMOKE QUESTION—MR. C. W. WILLIAMS AND MR. HALL.

TO THE EDITOR OF THE MINING JOURNAL.

Sir,—Will you allow me to make a remark, *en passant*, upon the controversy between Mr. Charles Wye Williams and Mr. Samuel Hall? The former gentleman states as follows, in his advertisement in the *Mining Journal* of the 6th inst.:—

"Mr. Hall observes—'Our disputes are not of a scientific nature.' I beg to tell him they are of no other nature, for as to any difference as to facts or duties, or the wording of his patents, these will soon regulate themselves. The questions really between us are scientific, and of real importance to the public, as involving points of considerable interest, and of some other will I 'dispute' with Mr. Hall—of these, however, in due time—our real dispute is only on the threshold."

From the above I looked forward to a scientific controversy of great public interest, and of considerable length, as Mr. Williams says the "real dispute is only on the threshold." You will easily judge of my surprise and disappointment, when eagerly opening your last week's Journal, and expecting a scientific treat, I read Mr. Williams' advertisement, dated Dublin, October 10; I had the patience to read it through, in hopes of finding something of "a scientific nature" concealed among the mass of irrelevant matter, of which I was surprised to find it wholly consisted.

It is not for me to become the advocate of either Mr. Williams or Mr. Hall, but I must say that I was much astonished at the two following parts of Mr. Williams' (autobiography):—

"I entered on my career at a critical period of the Iron Steamboat trade in Ireland, when Tennant, of Glasgow, was introducing the new process, and which then created a great sensation and important change in the trade—that the gentlemen with whom I first during my apprenticeship, being himself an able chemist, manufactured and applied the new chemical compound—that my first chemical and practical information was obtained in attending to the manufacture of this material, which was then called the *oxygenated muriatic acid, afterwards the oxymuriate of lime*, and now the plain 'bleaching salt.' That chemistry being then considered the essential study of a Member, the first book put into my hand was that of the illustrious Lavoisier, the great reformer of our chemical nomenclature, and that from him I derived not only my first knowledge of what he named 'oxygen,' but my attachment to chemical studies, for which I have ever thanked that perspicuous writer and able master."

In the first place, allow me to ask, is it not extraordinary that the first book put into the hands of Mr. Williams was that of the illustrious Lavoisier, and that he should, of course, have acquired such a depth of chemical knowledge as is requisite to understand that author without having to submit to the usual requisite labour of wading through elementary chemical and scientific works; however, I do not pretend to cast a shade of doubt upon Mr. Williams' statements, for it must be admitted that in most pursuits there are precocious geniuses, who leap over all the difficulties which oppose themselves to ordinary men—witness Jedidiah Buxton, who made such wonderful calculations, although in other respects he was but an idiot.

Although I am not at all surprised at Mr. Williams' astonishing knowledge of chemistry, I confess I am a little so at his not knowing, with such extensive knowledge, the difference between *oxygenated muriatic acid* and *oxymuriate of lime*, the latter being a combination of that acid with lime. I repeat, that he distinctly states "'my first chemical' and practical information was obtained in attending to the manufacture of this material, which was then called the *oxygenated muriatic acid, afterwards the oxymuriate of lime*.

I thought Mr. Hall was unreasonably severe in stating as follows, in his letter of the 5th ult., to Messrs. Caister and Crompton:—

"If I were gifted with Mr. Williams' modesty, I should tell him, and with great truth, that I had forgotten more of chemical and mechanical science than he ever knew, or ever will know."

Again, he says—

"The extreme modesty of Mr. Williams will perpetually keep peeping forth. I do not think he will admit that any other mortal but himself knows even the constituents of a neutral salt."

However, from the above instance of Mr. Williams' chemical knowledge, I fear that worse than Mr. Hall's statement is the case, and that Mr. Williams actually does not even himself know the difference between an acid and a neutral salt!!! I have a good deal more to say respecting Mr. Williams' letters, as well as those of Mr. Hall, which I shall communicate to you in the event of your doing me the favour of inserting the foregoing in your next Journal. Honestus.

Manchester, Oct. 18.

MR. HALL'S CONDENSERS—ST. GEORGE STEAM COMPANY.

TO THE EDITOR OF THE MINING JOURNAL.

Sir,—Being interested in the St. George Steam-Packet Company, my attention has been called to that part of the advertisement of Mr. Charles Wye Williams, in last week's *Mining Journal*, in which he states that the above company has suffered a loss of 20,000*l.* by the adoption of Mr. Hall's condensers. Will you allow me to ask Mr. Williams, through the medium of your Journal, whether the circumstance of the removal of the St. George Company's steamer from this port to Liverpool, in order to ply between that town and Dublin, in competition with the City of Dublin Steam Company (of which Mr. Williams is the managing director), is not the cause of his aiming this blow, for the purpose of hitting the St. George Company as well as Mr. Hall? An Inhabitant of Hull.

Hull, Oct. 18.

THE ARTESIAN WELL AT GRENELLE—THE PARIS BASIN.

TO THE EDITOR OF THE MINING JOURNAL.

Sir,—In the *Mining Journal* some time since will be found the interesting conjoint remarks of Messrs. Cuvier and Brongniart, on the formations of the Paris basin; not agreeing with these gentlemen in their conclusions, you will, perhaps, permit me to traverse the same ground with them.

Messrs. C. and B. observe—"On considering *all* the strata from the chalk upwards, we figure to ourselves, first, a sea which deposits on its bottom an immense mass of chalk and molluscous animals of particular kinds." This chalk formation, and the species from and by which the chalk is produced, demonstrate an era of production of oceanic organic species, uninterrupted for many generations, and disposed within the tropical band, the analogous strata being disposed in chains of hills, as well as in extensive valleys and troughs throughout the greater portion of Europe. "It stops abruptly—the sea retires—waters of another kind succeed it." This is applicable to the locality: rivers have formed within the main land, and have carried down into the basin, periodically, terrestrial plants and animals, which, uniting with the marine soil, produce strata of confused character, beds of lignite, and other products, the waters, by their volume, imparting a degree of freshness to the sea water to the extent of the phenomena manifest, and exterminating the species thus exposed to the sudden eruption of matter inimical to them. "Soon, however, another sea, producing new kinds of inhabitants, and feeding a prodigious quantity of shell fish, all different from those of the chalk, return to cover the clay, its lignites, and its shells." Here it appears that the causes of destruction previously noted are removed by a local or general catastrophe, the portions of the earth thus affected still continuing within the tropics, and subject to a higher temperature than formerly manifest, and the vast accumulations of lime secreting animals, building upon the preceding basis, tell of an uninterrupted series of generations propagating in warm seas, and continuing their labours to the surface of the waters, the *gradual decrease of the waters* causing the surface of the earth to appear as islands and continents, the lower portions of which soon abound with freshwater lakes, fed by streams, carrying into them, periodically, the gypsum and other matters of the desert soil over which they pass, forming "alternate stratum of marl and gypsum, which envelope the remains of the animals nourished in the lakes, and the bones of those that lived on their banks." Another, and evidently a general, catastrophe takes place, and these localities suddenly experience a new temperature and local action, large tracts of these desolate soils being again disposed beneath the waters *without* the tropical band, the colder regions beneath being inimical to the development of stony corallines, and the molluscs common to warm seas. Thus there are few species beyond oysters, the ocean tides sweeping over them, and depositing in localities vast quantities of sand: the waters slowly decreasing the land again appears, covered with pools and freshes, but gradually filling up or giving way to terrestrial products.

In the above summary I have given my own opinions, coupled with the phenomena locally manifest in the Paris basin, and applicable to locality alone, for the series of deposits in this basin, as in all other places, are extremely uncertain in their quantities and admixtures, presenting great inequalities of surface: thus, the lower beds exhibit a series of submarine hills, and the covering beds are similarly disposed, confounding the order of succession in numerous localities, and thereby obliterating those supposed marks of catastrophes. It is not the depth nor the extent of ocean beds which can always convey true notions of Time passed in forming them, for the sum of accumulated matter depends equally upon tidal causes, as upon the long-continued secretions of organic species. And, again, the presence of one or more particular species is no certain index of the origin of the bed in which it is found, for it may have been accidentally brought there from distant localities; and, again, numerous species are locomotive, and sometimes of migratory habits.

In examining the whole strata there are certain unerring guides to our discoveries; thus, every *limestone, chalk*, and *sandstone* range is decidedly of oceanic origin; it matters not whether fossil remains are or are not found in these series—oceanic action and oceanic life only can produce them. Again, every bed of lignite, every bed of vegetable earth, and aluminous clay, is as truly declaratory of its origin; hill and mountain ranges form within the waters, and the valleys and plains gradually fill up from the surface soil of terrestrial earth, the primary beds still protruding through a series of deposits periodically or casually disposed; thus it is, depth is not at all times a proof of the bed being of primary qualities. The observations of Messrs. Cuvier and Brongniart would lead the ignorant of science to infer, that this disposition of matter was uniform throughout the Paris basin—but such is not the case; thus, for instance, the upper and covering deposits of Montmartre, Romainville, and Neuteuil in Hundois, are of the same era of formation as the above-mentioned gypsum, although assigned by these and other geologists to the latter period, which would infer another catastrophe not warranted by the phenomena. The same want of careful observation, or, rather, the same lack of generalising, is manifested by those who speak of the London basin, which is, in truth, an irregular admixture of beds of gravel, sands, and clays, deposited between and on the submarine coral reefs and chalks, and the beds of shell-fish, marls, &c. Thus, in some places, we find coarse gravel or sand; uniting with these are beds of the finest kind, interleaving a sea shore, although now far beneath the surface. Again, in similar depths, we find coarse gravel, bearing evidence of having been the bed of a fresh or salt-water lake. And, again, covering these are beds of marl and clay, corre-

loping terrestrial plants and animals, the natives of a tropical clime. If, then, it is impossible to generalise from small localities, without very careful and numerous experiments and observations, how impossible must it be to build this whole planetary body upon, comparatively speaking, an atomic part of it. H. G. M.

London, Oct. 14.

MR. SAMUEL HALL'S SMOKE-CONSUMING PATENTS.

TO THE EDITOR OF THE MINING JOURNAL.

SIR,—I am *exceedingly surprised* at Mr. Charles Wye Williams's letter of 19th inst., inserted in *your* last week's Journal, for it does not contain, as it appears to *me*, one single paragraph relating to the real matter in dispute between that gentleman and Mr. Samuel Hall. I conceive the subject of the controversy to be the respective merits of the patent methods of those two gentlemen, for the combustion of coal without smoke, and the priority of their inventions, provided there be any similarity between them, and that they interfere with each other. I am led to make the above observations, from having this day received a circular from H. Austin, Esq., 29, Bedford-street, Strand, Hon. Secretary to the Committee of the Metropolitan Improvement Society; I have, in consequence thereof, carefully investigated the correspondence of the above-mentioned gentlemen, as inserted in the recent Numbers of the *Mining Journal*. The plain questions appear to me to be simply these—are the apparatus and means used by them similar to each other, and, if not, which of the two methods is the best? But, supposing there is any similarity between them, which of the gentlemen is the prior inventor and patentee? for it is necessary that the public should be put in possession of this information, to govern them in making their arrangements respecting the patent rights. I am surprised at the circumstances of Mr. Williams's repeatedly asserting that Mr. Hall had no patent in 1838 (as well as in 1836), and at his even calling on you to correct the statement you made to that effect in your Journal of 17th ult., and, at the same time, stating that Mr. Hall's second patent was taken out in 1841. On that gentleman's referring you to the Inrolment Office for the date of the patent in question, I think the least thing Mr. Williams could have done, was candidly to have admitted that he was in error; but instead of doing so, he lays the blame of his ignorance upon Mr. Hall, and asks how he (Mr. W.) or the public were to know of such patent? Surely Mr. Williams need not be told that he and the public had only to inspect the lists of patents published monthly in the *Mining Journal*, the *Repertory*, the *London Journal*, and many more periodical works, or to have applied to any patent agent on the subject. Mr. Williams even goes so far as to say that "the question is not altered by any such error." Surely that is not the case? for the second patent being taken out in 1838, is prior to that of Mr. Williams's in 1839, instead of being subsequent to it, as would have been the case if such second patent had been obtained in 1841. Another strange statement is made by Mr. Williams respecting locomotive-engines, in the following words—viz., "as regards locomotive-engines, I have never even attempted their improvement in anything that regards combustion or the admission of air." Now, as Mr. Hall actually gives an extract from Mr. Williams's specification, and accompanies it with a drawing, showing the fact of his having made such an attempt, I do think Mr. Williams was bound to give some explanation why he made such an assertion, as I cannot pay him so poor a compliment as to suppose he is not able to do so, although I confess I do not see how he can reconcile so strong and clearly worded a statement as that above quoted, with the specification of his patent accompanied by drawings, adduced by Mr. Hall; Mr. Williams has not, in fact, taken the slightest notice of the contradiction of this part of his statements, which must be much more pertinent than Mr. Williams's private history, of which nearly the whole of Mr. Williams's letter, in the last week's *Mining Journal*, consists. Having carefully examined the specifications of Mr. Hall's three patents of 1836, 1838, and 1841, and that of Mr. Williams's patent of 1839, I am quite of opinion (to use the words of the latter gentleman himself) that "as to land and marine boilers," Mr. Hall's plans and (his) are directly opposed to each other, and not only in land and marine boilers, but still more so in locomotive-boilers. If this be the fact, of which any one will be convinced by examining the respective specifications, why did Mr. Williams make his attack on Mr. Hall at the Manchester meeting of the British Association? and why did he commence this controversy, by his letter in the *Mining Journal* and the *Mechanics' Magazine* of 3d September last? I have been informed that impartial and accurate trials are now being made alternately with the two boilers belonging to the Manchester and Birmingham Railway Company, Store-street, Manchester, one of them being fitted with Mr. Williams's apparatus, and the other with Mr. Hall's. It is greatly to be hoped that the directors of that company will do the public the important service of laying the results fully before them, that they may not be misled either by the patentees or any other interested parties.

London, Oct. 19. AN ENQUIRER.

[We have given insertion to the letter of our correspondent, but, it must be understood, that, in future, we shall not insert any letters bearing on the question, without the names of the writers being appended in print, although known to us. The principals have no gains, neither should their advocates.]

SOUTHAMPTON DOCK COMPANY.

TO THE EDITOR OF THE MINING JOURNAL.

SIR,—I beg leave now to address you about the scheme for raising money adopted by this company, by re-issue of forfeited 50*l.* shares for 20*l.*, accompanied by debenture notes for 30*l.*—the one not to be granted unless the party would take the other. This mode of raising money I, under legal advice, protested against, and by far the majority of the shareholders have declined availing themselves of the offer, not considering the proceeding legal till sanctioned by Parliament; yet the directors wish to maintain to themselves, and the few who have accepted the proposal, the advantages of the "bonus" it affords—and this without going to Parliament on the subject.

I will now proceed to state the circumstances connected with the offer. Last April I received (as did the shareholders generally) a "circular," dated 15th of that month, inclosing a "report read, and resolutions adopted thereon, at a special general meeting of the proprietors of the Southampton Dock Company, held at the company's offices on the 11th inst., for the purpose of considering and sanctioning a plan for completing the company's capital by the sale of shares forfeited, by the issue of debentures, or otherwise, *subject to the sanction of an Act of Parliament to be applied for in the ensuing Session*," under which, *when sanctioned by Parliament*, I was officially informed that I was (in respect of my proportion of shares) called upon to exercise (forthwith) the option of taking thirteen forfeited 50*l.* shares, to be re-issued at 20*l.* each, and thirteen 30*l.* debentures, "every such share to entitle the holder to the benefit attaching to an original share in the company, and such debenture notes to bear interest at 5*l.* per cent. per annum, and be repayable at the end of three years, but with an option to the holder then or since either to be repaid the amount subscribed, or to renew it for a further period, not exceeding five years, nor less than two, *or to convert it into 50l. of the capital of the company.*" Now, this option I thought proper to reserve my decision upon until such Act of Parliament should have been obtained, before which time I maintained it could not be known whether any such arrangement would be suffered to be carried out, and, therefore, I protested against the power of the directors to call upon me then to exercise any such option, *or at any other time* before such Act of Parliament was obtained.

I protested the more against the directors calling upon me then to exercise such option, or their taking any other proceedings, on the presumption that such arrangements would be sanctioned by Parliament, because I was properly advised, that, when Parliament came to be informed that the Parliamentary list of subscribers, upon which the present Act was obtained, contained (as had been publicly acknowledged by the company's chairman, by the secretary, by the most influential member of the provisional committee, and as could be readily proved by witnesses) about 200 shares not *bona fide* subscribed for at the time, and that Parliament had then been imposed upon in the granting the present Act—that Parliament would refuse all further Parliamentary assistance to the "Southampton Dock Company." And I further protested against the proposed arrangements, and the directors proceeding to act upon them, *before* they were sanctioned by Parliament, because I was further properly advised, that Parliament would not sanction any such arrangement, when it came to be pointed out to Parliament—1*st*, that the directors had placed the company in the present position, in the first instance by obtaining the present Act of Parliament before the proportionate amount of shares required by Parliament had been *bona fide* subscribed for, and next by commencing contrary to a "resolution" of the proprietary, adopted at a "special meeting" held on 18th April, 1839—the directors having allowed the works to be commenced before the "*call then due had been paid on five-sixths at the least of the number of shares already subscribed for*," in direct disregard and violation of such resolution; 2*d*, that the proposed arrangements were an injury and injustice towards those proprietors who, having embarked in the undertaking on the basis of the present Act of Parliament, and the faith of its provisions being carried out, might not now choose to embark more money therein; and, 3*d*, that the sanctioning by Parliament of the proposed arrangements would amount virtually to a repeal of so much of the "Usury Acts" as are still in force respecting loans at interest on lands and tenements, specially excepted by "Act 2*d* and 3*d* Victoria, chapter 27," the proposed remuneration for the advance on the debentures being more than 5 per cent. interest, and the security offered arising out of lands and tenements.

I have gone to greater length in this letter than I intended, and must now conclude by calling upon the directors not to allow the *few* who have, without Parliamentary sanction, availed themselves of the offer made to take the forfeited shares and the debentures (by which means the average cost of their shares has been materially reduced) to do so to the manifest injury of the majority, who would, probably, have accepted the "proposal," if it had been sanctioned by Parliament—a step which the directors now say they will not take, although they officially certified, in "one of their reports," that the same was necessary to render the scheme legal.

City, Oct. 17. T. R.

P.S.—I wish further to state, that, against any "rights" the less scrupulous portion of the proprietary may suppose they have acquired, by accepting the shares and debentures, I have only extended my "protest."

[ADVERTISEMENT.]

THE SMOKE QUESTION—MR. WILLIAMS AND MR. HALL.

TO THE EDITOR OF THE MINING JOURNAL.

SIR,—In Mr. Hall's last letters, in your Journal, he seeks to disparage those chemical principles which I have taken as my guide in the admission of air to furnaces, and on which I rely for producing a more perfect combustion of the gaseous matter from coal. These principles, although emanating directly from the writings of Davy and Dalton, Mr. Hall, nevertheless, has characterised as "fudge." Involving, as they do, considerations of great public interest, it is worth inquiring what those principles are?—what support they have from high chemical authority?—and what are their direct bearings on the subject of combustion, practically considered? Again, as Mr. Hall has charged me with an "overweening vanity" in this matter, I am desirous of submitting to the public the grounds on which my pretensions, as a patentee, are based. This is done in a few words.

In my inquiry respecting the combustion of the gaseous matter from coal, I had to compare the effects produced by the coal gas when issuing from a single *large* orifice, or when it issued from the fourteen small orifices of the Argand burner. I perceived that the greater perfection of combustion which the Argand lamp exhibited was directly occasioned by the more numerous, and, therefore, enlarged, surfaces for contact which the jets presented, "in the same way (as Dr. Brett observes) as the surface of any given volume of water is increased by causing it to pass, in their streams, through numerous apertures." My first view, therefore, towards effecting a more perfect combustion of the gas generated *in furnaces*, was to imitate the principle of the Argand burner—viz., the bringing this combustible gas, in *the form of jets*, to the atmospheric air. I was soon, however, compelled to reject this mode of proceeding, as I found, according to the reasoning and practice of Sir H. Davy (and which led to the discovery of his safety lamp), that the heated gases were soon brought below the temperature of ignition, by the cooling effect of passing through small apertures, and that their combustion was thereby prevented, as when a wire gauze is held over the flame of ignited gas; under these circumstances, I almost despaired of carrying the principle of the Argand burner into the furnace. Chemistry, however, came to my aid, and enabled me to effect my purpose. Observing the conditions under which chemical action is induced, and combustion effected, I concluded on reducing to practice the principle which chemistry alone could have taught—viz., that combustion would be equally effective and energetic, whether the combustible be brought by jets to the supporter or the supporter to the combustible. Following out this principle, it was to be expected that the effect would be the same, if, instead of bringing the furnace gases in jets to the air, I reversed the process, and brought the air in jets to those gases. The first attempt proved that the principle was equally applicable on the large scale of the furnace as the small scale of the laboratory lamp, and my success was complete. This was, then, the subject of my patent. After many experiments, I found that the sole conditions of success were—1*st*, that the combustible gas should be brought to the high temperature required for chemical action and union with oxygen; and, 2*d*, that either one or the other—the gas or the air—be introduced *in the way of jets*—this principle of jets being the only means of effecting that sudden and surface contact between the gas and the air, which is the *sine qua non* of their union and combustion, where time cannot be allowed for the more deliberate and true Daltonian diffusion.

In practice, then, and for the first time, the fact was illustrated on *the large scale*, that "*combustible*," and "*supporter*" of combustion, were convertible terms, and that jets of air introduced to the gas, or jets of gas to the air, had equally the effect and appearance of jets of *flame*. Here, then, is the extent of my claim to a patent. To this Dr. Kane refers, when he pays me the high compliment of saying—"The value of this, although obscurely felt by others, from the imperfection of the older methods, has been certainly first placed in its important and just aspect by your illustrations." Here is the practical application of a well-known chemical principle in the combustion of gaseous bodies. It is not the introducing the air in this place or that place (and in what place has not the air been introduced by some inventor or other?), but *the mode* of introducing it; and they who dispute my principle, or the value of my mode, must be prepared to say that there is no difference in effect between the Argand burner and the single large jet. Here, then, is my claim on the score of my "invention," as it is termed in patent law. To this alone does my "overweening vanity" extend.

In the course of my experiments I became convinced of the all-commanding importance of raising the temperature of the gases in the furnace, before bringing them into contact with the air, and that provided these conditions of numerous jets on the one hand, and high temperature on the other, were satisfied, it was immaterial, in practice, how large the scale of operations might be—in what place the jets were introduced—whether they began at the bridge, or at intervals of ten or even twenty feet distant.

The principle on which I proceeded in, however, so clearly enunciated in the following extracts, from the opinions of Professor Brande and others, that I have quote them as the best reply to Mr. Hall's "fudge." Prof. Brande observes—"You admit a number of jets of air into a heated inflammable atmosphere, and so attain its combustion in such a way as to produce a great increase of heat." Again—"In this way, each jet of air which you admit, becomes, as it were, the source or centre of a separate flame, and the effect is exactly that of so many jets of inflammable or coal gas ignited in the air; only, in your furnace, you *invert this ordinary state of things*, and use a jet of air thrown into an atmosphere of inflammable gas—thus making an experiment upon a large and practical scale, which I have often made on a small and theoretical one, in illustration of the inaccuracy of the common terms of *combustible*, and *supporter of combustion*, as ordinarily applied." Mr. Brande then adds—"I have no hesitation in saying, that the views promulgated in your essay are substantially founded upon just and scientific principles." After such a testimonial, may I not almost be censured for noticing such cavillers as Mr. Hall, who can look on these views and principles as "*fudge*." Respect for myself, and respect for the public, who have a right to examine the claims of every man who seeks to have his opinion received, has alone induced me to make this communication.

I might have commented many such testimonials from men of high standing, but will content myself with the following extracts from deliberately-written and elaborate examinations, both of my treatise and the principles on which my mode of admitting air is based.

Dr. URE observes—"In the case of great steam-boiler furnaces, for which your patent is especially intended, your plan of distributing atmospheric air, in a regulated quantity, *by numerous jets*, through the body of gaseous matter, is peculiarly happy, and must enable you to extract the whole heat which the combustible is capable of affording."

Dr. HOPE, of the Royal Institution, Liverpool, says—"By causing the atmospheric air to be driven, *by jets*, among the inflammable gases, you employ, as it appears to me, the only means practicable, in operations on a large scale, of causing a sufficient mechanical admixture between the air and the gases to be burnt. By such means you considerably *extend the surface* of any given bulk of atmospheric air admitted, in the same *way* as the surface of any given volume of water is increased by causing it to pass, in thin streams, through a vessel containing numerous apertures." Again—"The old mode of combustion in furnaces is manifestly incompetent to effect this perfect combustion, and which is only to be obtained, in my opinion, by a plan based upon such principles as you have advocated."

Dr. KANE observes—"The introduction of air at the bridge, and along the flame bed, to supply the quantity of oxygen necessary for the combustion of the volatile products of the coal—the diffusion of this air, *secured by its issuing from a great number of small jets*—and the consequent full combustion of the gaseous fuel—are elements of real economy and success in practice. The value of this, although obscurely felt by others, from the imperfection of the older methods, *has been certainly first placed in its important and just aspect by your illustrations.*" These, I repeat, are the principles on which my claim to the attention of practical or scientific men is based—these are the bounds by which my "overweening vanity" is circumscribed.

You have, in your last Number, page 333, drawn attention to Mr. Hall's advertisement, announcing his claim to his invention, and which he describes as "*the only method* (although sought for during the last half century) that has been devised for the perfect *combustion of smoke*." This I will not dispute with him, my claim being for the combustion of *the gas*, before it has been converted into *smoke*. Setting aside the little touch of "vanity" which this advertisement exhibits, I ask—will Mr. Hall explain the principles (if he have any) on which he expects to produce a more perfect combustion than any other patentee? For, surely, he has no right, on his mere *ipse dixit*, to expect that all the world will yield to his mere assertion, and on so difficult a subject as combustion.

But, to bring Mr. Hall and his invention to a practical test, I ask him to satisfy the public on the following points:—1. On what principle does he expect a more perfect combustion in steam-boiler furnaces by the use of *hot* air rather than *cold* air, when unaccompanied by the blast, for such is not advocated by any chemical authority? 2. On what principle does he rely, when he introduces this hot air at the front end, and near the door, rather than at the back end, as done by Mr. Cead? 3. On what principle does he rely for increasing the quantity of oxygen in a furnace, by heating the air which is to supply such oxygen, seeing that every well-informed chemist tells us that the hotter the air is made the less oxygen will be introduced? 4. On what principle does he rely for preferring to burn the *smoke*, rather than the *gas* from which the smoke is generated, by an imperfection in the process? To common minds, it appears a more common-sense proceeding, to burn the gas, in the first instance, by a perfect process (as we do in the Argand burner), rather than adopting the roundabout proceeding of first *making the smoke*, and then endeavouring to burn it. Until these questions are answered (and which I rather think he will be slow in doing), Mr. Hall is not justified in expecting that his mere *dictum* is to pass for authority, or in throwing the principles of others as "fudge" or "overweening vanity." C. W. WILLIAMS.

Liverpool, Oct. 17.

THE NEW TARIFF—THE MINING INTEREST.

TO THE EDITOR OF THE WEST BRITON.

SIR,—In considering the remedy suggested by Mr. Basset for the decline which he asserts must take place in the value of the produce of our copper mines—viz., "a better economy in our mining operations"—I divide the cost of working the mines into the following heads:—Manual labour and superintendence; the providing and maintenance of machinery; mining stores; and the lords' dues or royalty, as comprising the great bulk of the expenses; and I think it unnecessary on this occasion to refer particularly to other, comparatively unimportant, charges.

MANUAL LABOUR.—I abstain here from making any appeal to the higher feelings of our nature, and take a mere business view of the subject; and I believe that I express the decided opinion of the great body of our mine agents, when I assert that no further reduction in the earnings of Cornish miners generally can be effected beneficially to their employers. I do not deny that they may be compelled by circumstances to accept of work upon terms leaving them less earnings, individually, than at present; but I contend their physical capability for labour, and their energy, must, from insufficient sustenance and discouragement, be decreased in a still greater proportion; and, if this were carried into effect to any considerable extent, I am satisfied the condition of the present generation, at least, of the class, would be very seriously deteriorated in every respect. Though apparently "easier," so really "less expensive" terms can be enforced in this quarter; and I deprecate the suggestion, if it be intended to apply here, as being both impolitic and impracticable, to say nothing of its harshness. In regard to the expense of superintendence, I consider that no one having the slightest practical knowledge of the subject, and knowing how much the prosperity of the mines depends on the intelligence and industry of the agents, will *for a moment think* it expedient to lessen their stimulus to exertion, by reducing their very moderate incomes. I am confident that if Mr. Basset were aware of the extent to which members of this important class are hastened into early and premature graves, by the zealous discharge of their arduous and important duties, he would be the last man to the kingdom to reduce their incomes; indeed, I have little doubt that he would consider it to be "better economy" to support, in common with other gentlemen interested in our mines, some system by which this deserving body of men might maintain themselves respectably, and, at the same time, be enabled to make that provision for their families to which their station in life gives them a reasonable claim—an object which I believe to be as important to the interests of their employers as to themselves.

THE PROVIDING AND MAINTENANCE OF MACHINERY.—The present excessively low price of the principal material, and the depressed rate of labour employed in the construction of machinery, render it all but certain that a considerable advance must shortly take place in the expense of this department; any reduction of it is entirely out of the question. In regard to the current expenses of working the machinery, I believe that in the last forty years our mining expenses of this class have been reduced at least 50 per cent.; and as is all likelihood it will be very long before either horses or engines will be worked on "a straw a-day," there does not appear to be much prospect of timely and adequate relief from this quarter, to meet the impending depression of our produce, which Mr. Basset so confidently predicts.

As to mining stores being obtained upon "easier terms," a rise to the prices of them, generally, is, I consider, much more probable. Indeed, when the depressed state of trade throughout the kingdom is considered, and particularly that of the iron and coal districts, from whence we draw so large a portion of our supplies, an advance of prices seems to be inevitable. The expense of timber in the mines will be increased by the cessations of the drawback on Norway timber; and I am not aware that the cost of any of the principal articles of mining stores is likely to be sensibly reduced. Upon the whole, it must advance—and considerably, if the country is to prosper.

THE LORDS' DUES.—This charge has been long on the decrease. Borlase, in his *Natural History of Cornwall*, published about eighty years since, says that the rate was "generally one-fifth of the whole produce, clear of all expenses—never less than one-eighth clear." Now, the average rate is probably from 5 to 6 per cent. This reduction has taken place to a great extent in the present century. And here I bear ready and cheerful testimony to the truth of Mr. Basset's remark—"that no lords of mines have been more ready to assist the miners of his native county, than his family;" and I believe that those who know him, have the fullest confidence that he will cordially pursue the same liberal course. There can be no doubt that the reductions of the rates of dues which have, from time to time, taken place, have been fully warranted by the increasing depth, and expenses of working the mines; and that the discreet and timely concessions which have generally been made to reasonable applications in this respect, have been most advantageous to the parties immediately interested, as well as to the public: and though it cannot be expected that mine lords, any more than other men, will sacrifice their properties *pro bono publico*, there can be no doubt that, judging from the past, they will readily respond to any appeals which may be duly made to their judgment, liberality, and public spirit. Before I quit this part of the subject, I take upon myself to make a suggestion. The importance, and, I think, the reasonableness of which is obvious. It is that instead of the customary term of twenty-one years (a term scarcely long enough to justify even the comparatively safe and inexpensive improvements of agriculture) mine leases should be granted for such longer terms as would justify the adventurers in their precarious outlay, and induce them so to lay out their operations as to insure their own probable advantage, and the certain advantage of the landowner and the public, by the most extensive and permanent arrangements. It might be very well formerly, when the Cornish copper mines were exceedingly rich, and involved little competition either to sink, to work them on a short lease. But now tells us, that in July and August, 1837, copper ore was raised from Wheal Virgin, in Gwennap, which sold for 15*l.*/ton; and I gather from him, that the cost to the adventurers thereon, exclusive of the lords' dues, was about 30*l.*/ton! Should any productive mines were opened in Cornwall about that period, and, under all the circumstances of them, the term of twenty-one years might then be a suitable one; but I submit that the present condition of mining in Cornwall imperatively calls for an extended one.

In regard to another matter, which I cannot pass over unnoticed—the adventurers' profit—it can scarcely be expected that, with all its seductiveness, they will continue to embark in mining enterprise, if they fall in with Mr. Basset's notion, that "our produce must be obtained at a cheaper rate;" unless they can be shown in what respect "better economy" is practicable, to an extent likely still to leave them some prospect of advantage in their undertakings. Although I do not participate in the sanguine expectation of speedy advantage from "a better economy in our mining operations," which Mr. Basset appears to entertain, I do not presume to set any limit to the further progressive and valuable improvements which may reasonably be expected to take place, from time to time, from the ingenuity and intelligence of our mining population. On the contrary, I anticipate the continued course of improvement with the greatest confidence, provided it receive sufficient stimulus. But when Mr. Basset looks to "better economy in our mining operations," as a sufficient and timely set-off to the depreciation in the value of our produce, which he expects to be effected by the tariff which is to come into immediate operation, I fear that he greatly overrates "the march of improvement" in respect of its speed.

From the anticipated fall in the price of copper from what Mr. Basset considers "its present high price" (the manufactured article being very nearly as low as it has ever been for the last twelve or fifteen years) he looks forward to its being much more extensively used. That a lower price and an increased consumption of the article would naturally follow, as cause and effect is clear enough; but, unless it be at such a price as will enable us to keep open our mines, an increased consumption of copper will no more benefit the Cornish mining interest than an increased consumption of platina or of indigo. In order that the remarks which I have made on this subject may not be misunderstood, I think it right to state, that I do not attach that exceeding importance to the tariff, in regard to our copper mining interest, which some influential persons in the county appear to have done—"bemoaning their case as hopeless," to use Mr. Basset's words. That the tariff is just as inimical to our interest as the Government could contrive to make it, I readily admit; but, to my mind, the greater danger, whatever may be its degree, is from abroad, and must be laid at the door of Nature. If a few more such deposits as those in the copper mines of Cuba should be opened, whether our Government be friendly or hostile to our interests, few, if any, of our mines, could long be worked. Otherwise, I by no means look upon our case as desperate; and I believe that this impression is very general through the county.

Although I endeavour, to this extent, "to soothe," like Mr. Basset, "the fears of those who bemoan their case as hopeless," I do not shut my eyes to the fact, that we have been unfairly and treacherously dealt with by Ministers. It was professed at the Board of Trade, that the Government "would afford the Cornish miners every advantage within its power;" and how has this profession been redeemed? Most of your mining readers can readily answer this question; and I think they will agree with me, that short of thereafter introducing measures, which even the author of the peace income tax could not dare attempt—a bounty on the importation of foreign copper, or an export duty on British copper—they could not possibly have exhibited greater inconsistency. I do not affect to believe, as Mr. Basset supposes others to do, that, in this instance, they (the Government) "have drawn up the tariff in ignorance of the various interests which will be affected by it;" and I believe that the gentlemen comprising the late deputation, had reason to form too high an estimate of the ability and intelligence of those members of the Government with whom they came in contact, and of their means of information, to attribute their faithless inconsistency to such a cause. On the contrary, I apprehend that they were at no loss to understand to what influence our interests were intentionally and deliberately sacrificed.

A MINER.

MINING IN AMERICA.

ON THE WISCONSIN AND MISSOURI LEAD REGION.

BY JAMES T. HODGE, ESQ.

[Continued from Journal of 1st October.]

ACCOUNT OF THE LEAD BUSINESS OF WISCONSIN.—The lead ore is sought for by the miners at their own risk. Wherever they think there is a prospect of discovering a "lead," there they commence their operations—two of them joining to sink experimental shafts. Sometimes they spend a year in unsuccessful exploring, but with the expectation of being repaid for it all by a happy discovery. If they strike a "lead" they offer the ore to the nearest smelters at the market price, and the owner of the lead comes in for his share of one-fifth of the ore raised, but the original discoverers are allowed by the custom of the country the other four-fifths. Should the discovery promise to be an important one, other miners are attracted to it from the country around. They come in companies proportioned to the reputation the new diggings have acquired, and in a month's time a little village of low cabins, with a population of 300 or 400 people has sprung up in the midst of what was just before wild woods or an uninhabited prairie. The new comers not having been instrumental in making the discovery, have an inferior claim to their predecessors, who are not permitted by "the rules of the mines" to monopolise more than a certain number of square rods around their successful shafts. As each one comes he selects his own ground, and so many rods are staked out for his operations, but of the ore he raises four-fifths go to the proprietors of the land, and he is allowed but one-fifth. The proprietor may persuade miners to come and work in this way, or he may hire them on fixed wages, but the former is considered the preferable plan, because the miner is induced by it to raise as much ore as possible, and in the latter it is no object to him to take out any at all, and it is, therefore, frequently the case that when working on wages they will carefully conceal a rich lead, and work in unprofitable rock until the proprietor abandons the diggings, and years, perhaps, have passed, when they will come back and make a new discovery there, and work it on shares. The miners sometimes sell their "prospect," while it generally comes into the hands of the proprietors, who then receive their greatest share of four-fifths, or it is bought by other miners, who are entitled to the same privileges as the original workmen. All mineral raised on Government land should by law be subject to a tax of 10 per cent., paid in lead by the smelters, and the lands are not subject to entry. But since the year 1835 none of these dues have been collected, though a Government superintendent has always been appointed for this purpose, and now no attempts are ever made to collect the ore rents, neither are any questions asked at the land offices whether or no the lands about to be entered are known to contain mineral. It is generally believed that a law will be passed taking off all restrictions on mineral lands, both as to entry and subsequent claims for ore rents.

The smelters are, for the most part, a distinct class from the miners. They are men of a little capital, who expend it in establishing one or more furnaces in what they judge a suitable locality, both for convenience of water power and proximity to mines that promise to be permanent in their supply of ore. Their business is to visit the mines, and every day bargain for so much mineral, sometimes of one set of miners, sometimes of another. The ore is weighed out by the miners, the smelter sends his teams for it, and has it weighed again at the furnace. The price fluctuates with the price of lead, with the greater or less amount of competition, either among the smelters or miners, and varies with the distance from the shipping port, which is now Galena, in Illinois. As the smelters generally have no capital to spare, they must either sell their lead, as they make it, for what it will bring, or if they ship it themselves they are compelled to cease their operations until they receive their returns, for they are obliged to pay for their mineral in cash, to secure the good will of the miners, and it may be two months before they receive the proceeds of their lead sent to the eastern market. On this account, and from the unsteady character of the miners, who wander about, as their fancy directs, from place to place, there are few furnaces that keep in blast for a great length of time; they go for a week, or a month, or six months, and stop as irregularly. No supply of mineral is ever bought up when it is low, though lead is often kept stacked up, waiting a higher price, and the furnace out of blast for want of means to buy more ore.

The furnaces are much improved within a few years past. The ore was formerly melted down on log heaps, and a small portion of the metal thus extracted at a great waste of fuel. Now they are of the most approved forms, and constructed with particular regard to the most economical methods of smelting as to fuel and labour. They make use of the reverberatory furnace, with its modification, the cupola, the blast-furnace, and the slag-furnace.

The reverberatory is much like the common reverberatory-furnace for puddling iron and smelting other ores. The ore is supplied either through a hopper on the top, or through the holes on the sides, which serve also for admission to the pokers used for stirring up the charge. The hearth is covered with old cinders beaten up, and it inclines back from the fire, so that the metal runs out at the end under the chimney. In England, where these furnaces are extensively used, they are supplied with bituminous coal for fuel, but here they must make use of wood, and from the great consumption of it this class of furnaces is only resorted to where wood is of little value, and water power cannot be obtained.

Another objection to them, besides the consumption of fuel, is that they do not smelt the ore clean, the slag being nearly as rich as the ore originally was [illegible] it is, therefore, necessary to have a slag furnace connected with them. It is supposed, from rude calculations, that an ore worth about 80 per cent. [illegible] yield, in a reverberatory, about 65, and that the slag produced will contain from 30 to 40 per cent. of lead. The following is an estimate of the working and produce of O'Neill's furnace, about two miles south of Mineral Point. It is worked eighteen hours out of the twenty-four by two shifts—each with two hands. The charge varies from 2000 to 12000 pounds of ore, sometimes requiring three, sometimes four, charges of 3000 pounds each, according to the poorer or better quality of the ore. The consumption of fuel is about two cords a day, and the produce is from seventy-five to eighty-three pigs a-day of seventy pounds average weight. The two lead smelters' wages, $30 per month each—two back hands $25, and the board of them all beside. The average price of ore is probably about the price it was selling for at Mineral Point in September, $15 per thousand pounds; lead was then worth at Galena three cents per pound.

Estimate of Expenses of Reverberatory Furnace.

Wages per month, as above $110—board four hands, four weeks, $48	$158 00
Ore 10,500 lbs. daily for twenty-six days, at $15 per 1000 lbs.	4095 00
Wood—fifty-two cords, at, say, $2	104 00
Hauling ore to furnace, 273,000 lbs., at, say, 75 cents per 1000	204 75
Hauling lead to Galena, seventy-nine pigs daily, at 20 cents per 100	287 56
	$4889 31
Worth of 2054 pigs of lead at Galena	4313 40

Besides this produce is the amount of slag made, of the value of which it is impossible to make a correct estimate. The only way, perhaps, by which we may approximate it, is as follows:—Supposing the ore originally to be worth 75 per cent. of lead, the 273,000 pounds then contain 204,750 of metal, of which 60,970 are missing; allow 10 per cent. for loss in the furnace (escaping in fumes of the oxide and sulphate of lead), and there remain 54,873 pounds of lead, which must be in the slag. Taking average pieces of this slag, which consists of a mixture of pure lead, unaltered galena, sulphate of lead, and earthy matters, grinding them thoroughly, and submitting portions of the powder to analysis, fusing one portion with carbonate of soda, and digesting another many days in dilute nitric acid, and then fusing the insoluble remainder with dry carbonate of soda, I obtained the following result, neglecting the sulphur and sulphur acid:—

Silica		13 per cent.
Sulphate of lead obtained by the action of fuming nitric acid on the sulphuret, precipitated by hydro-sulphuric acid, gave lead	34·30	„
Peroxide of iron	24·33	„

The 54,873 pounds of lead require, therefore, 160,000 pounds of slag, when this contains 34·30 per cent. of lead. It seems a fair allowance that this should be worth one-third as much as the original ore, or $5 per 1000 pounds = $820. Adding this sum to the value of the lead made, we have $4313 40 + $820 = $5133 40; from which deducting the expenses, 4889 31—leaves, as the profit per month, $244 09.

This estimate gives a small return for the amount of capital employed; but it must be observed that it is made out under the worst circumstances in which a smelter can be placed, for, without considering the highest wages that are paid, high board, and the heavy item of hauling ore, which may be much diminished with the distance, suppose ore to be raised on land owned by the smelter, discovered by others, he saves at once $820, and his monthly profits increase to $1063. Suppose him to have made the discoveries with his own hired miners, on his own land, and he then saves $3276—making his profits for the month $3520. But this calculation is made rather to show what might happen than what has, or is likely to. It is one of the chances of the business in which, to some extent, several smelters have been fortunate; but, for the most part, they would be glad now to obtain half the ore they require, off their own lands, as the result of the discoveries of others.

The blast-furnace is like those of the same name in general use in England; though coke is the only fuel there supposed to be suitable for it, charcoal has here been found equally good and is in general use. The blast is raised by the simplest machinery—a crank on the end of the axle of the water-wheel working either the common double bellows or the cylindrical bellows, while another pair is often connected with the same wheel to blow a slag furnace or a copper furnace, as at New Baltimore. Three hands at a time are required to work this furnace; the head smelter, whose duties are not quite so arduous as those of the head smelter of a reverberatory, and whose pay is not so high; a "back-hand," who assists the smelter by throwing in charcoal and wood and ore after he stirs the fire; and an assistant who prepares the materials. They work one shift, which ends when thirty pigs are made, and this requires from eight to ten hours; then another set of hands come on, and work another shift; some smelters, however, employ but one set—still their day's work is over when the thirty pigs are run.

The process is this:—A fire is made in the morning of billets of wood carefully arranged in the fire-place, the blast is put on, and charcoal added, as the wood burns away; ore is then thrown on in small quantity, together with a little lime. The ore has first been prepared by breaking it up either with a hammer or between a pair of cast-iron rollers, into pieces about the size of pigeon's eggs, and, if mixed with much clay, it must also have been washed in a stream of water. It is allowed to remain a few moments on the surface of the fire, while a part of the sulphur is burnt out and carried off, in part combined with the oxygen, supplied in large quantities by the blast, which comes in from behind through the fire. When the mass begins to melt, and becomes consolidated, the head smelter, with a long iron bar, pries up the whole body, working under the iron plate in front of the fire; he then finishes the operation by similar stirring above, and as he opens the mass the back-hand throws a handful of billets of wood under the whole, against the back wall and the tweer, and immediately adds more charcoal and more ore. This remains on the surface a few moments, and then the same operation is repeated, and so on. When the material clogs up and forms lumps, they are beaten and broken with the shovel or poker. The little slag which is produced is thrown up in the corner of the furnace, to be broken up and mixed with the ore, or reserved for the slag furnace. It is important neither for its quantity nor its richness, this method of smelting being found very effectual in reducing the ore. The metal soon fills the basin at the bottom of the fire-place, and then runs out down the groove in the sloping hearth in front into a pot, where it is kept in a melted state by a fire of chips under the pot, and is ladled out into moulds whenever convenient. The whole inside of the fire-place is lined with heavy blocks of cast-iron made for the purpose, and generally brought down the Ohio river. Considerable skill is requisite in managing the fire, and it is only by long practice that one learns the true method of stirring up the charge, so that the metal shall run freely and steadily. The lime is supposed to act as a flux, but very little, however, is used, a handful or so being thrown on at each stirring.

[To be continued.]

MINING CORRESPONDENCE.

ENGLISH MINES.

HOLMBUSH MINING COMPANY.

Oct. 17.—I beg leave to inform you that Hitchins's shaft is sinking below the ninety fathom level, with good progress. In the 110 fathom level west the lode is ten inches wide, and worth 6*l.* per fathom; in the winze, sinking below this level, the lode is six inches wide, with a small proportion of ore. In the 100 fathom level west the lode is still about eighteen inches wide, and worth 17*l.* per fathom; at this level east the lode is small and unproductive; the lode in the eastern stopes, in the back of this level, is feet wide, and worth 40*l.* per fathom; the lode in the western stopes, in the back of ditto, is two feet wide, and worth 45*l.* per fathom. The ninety fathom level west the lode is eighteen inches wide, and worth 30*l.* per fathom; the lode in the eastern stopes, in the back of this level, is eighteen inches wide, and worth 34*l.* per fathom; the lode in the western stopes, in the back of ditto, is sixteen inches wide, and worth 20*l.* per fathom. In the eighty fathom level east the lode is eighteen inches wide, and producing stones of ore; the lode in the stopes, in the back of this level, is fifteen inches wide, and worth 20*l.* per fathom. In the sixty-two fathom level east the lode is six inches wide, and interwlixed with ore. The twenty fathom level east and the tribute pitches are without important alteration since last reported.

H. PHILLIPS.

TREGOLLAN MINING COMPANY.

Oct. 17.—The engine-shaft (Baker's) which is being sunk on the course of the lode is 7 fms. 3 ft. below the fifty fathom level; the ground is still favourable for sinking, and we expect to reach the sixty fathom level in about a fortnight from this time; the lode in said shaft is large, and chiefly composed of spar and peach, producing a little ore. The lode, in extending the thirty fathom level east, is also large, and its principal composition is of soft spar and peach, occasionally producing a small quantity of good ore; this level is driving eastward from Baker's shaft twenty-eight fathoms, and we expect it will shortly reach the ore ground coming down from the forty fathom level. The tribute pitches are without important alteration. We have sampled to-day, computed fifty-one tons of ore.

J. NINNIS.

UNITED HILLS MINING COMPANY.

Oct. 16.—Seventy Fathom Level, Eastern End—Lode three feet wide, six inches on north part good ore; western end, lode three feet wide, producing some stones of ore. Sixty Fathom Level—In driving east at this level the lode is three feet wide, one foot ore of fair quality; in the western end the lode is three and a half feet wide, orey throughout, of low quality. Fifty Fathom Level—In this end the lode is four feet wide, two feet good ore; the lode in the winze is two and a half feet wide, eighteen inches producing ore of average quality. Eastern Shaft—Lode three and a half feet wide, coarse in quality. Forty Fathom Level—The lode in this end is four feet wide, producing but little ore, much corrupted with mundic.

N. LANGDON.

TRELOIGH CONSOLS MINING COMPANY.

Oct. 15.—Christoe engine-shaft is now down to the eighty fathom level, and we have commenced driving north to cut the lode. The seventy west is split into two branches, the south branch producing [illegible] stones of ore. The rise in the back of the sixty west is worth 6*l.* per fat[illegible] The winze sinking under the fifty, over the above rise, is worth 14[illegible] Gordon's shaft will require a few days more to complete to [illegible] level. Good Fortune shaft is nearly down to the fifty-fou[illegible] we shall commence driving east and west in a lode worth [illegible] The forty-four east is worth 4*l.* per fathom. The [illegible] 7*l.* per fathom. We are sinking a winze under the [illegible], in which the lode is worth 9*l.* per fathom.

[illegible]

WEST WHEAL JEWEL MINING ASSOCIATION.

Oct. 17.—There is no alteration in the ground in Buckingham's shaft since our last. The seventy east, on south branch, is a little more favourable for driving. In the seventy east, on Wheal Jewel lode, the lode was taken down this week, and is worth 35*l.* per fathom. The seventy west, on the same lode, is of a very promising character, eighteen inches wide, and worth 6*l.* per fathom. The fifty-seven east, on this lode, is worth 6*l.* per fathom; the winze under this level is worth 20*l.* per fathom. In the forty-two, east of little cross-course, we have not taken down the lode this week, as intended, as it would hinder the tributers; the ground about the lode is very favourable for ore.

STEPHEN LEAN.

TRETOIL MINING COMPANY.

Oct. 17.—The lode in the forty fathom level, east of Williams's shaft, is twenty inches wide, very good tribute ground. The lode in the rise, in the back of this level, is six inches wide, good tribute ground. The lode in Henwood's shaft is fifteen inches wide, good tribute ground. The lode in the thirty fathom level, east of Henwood's shaft, is still disordered by means of the cross-cut mentioned in our last report. The north part of the Slide-park lode, at the adit level, west of John's shaft, is six inches wide, producing a small quantity of ore. The tin lode, which we are stoping in the adit east of Morcom's shaft, is much the same as last reported. We have sampled this day 140 tons of ore.

H. WILLIAMS. J. MORCOM.

BEDFORD UNITED MINING COMPANY.

Oct. 17.—I beg to hand you report of these mines. In Wheal Marquis, in the forty fathom level east, the lode is about two feet wide, composed of spar, mundic, and copper ore, and the end will yield about a ton and a half per fathom. In the forty fathom level west the lode is about sixteen inches wide, composed of spar, mundic, and spots of copper ore, but not enough of the latter to pay for saving. The lode in the thirty fathom level east is about two feet wide, and has assumed a much more promising appearance since last report. In the twenty-five fathom level west the lode is about fifteen inches wide, composed of mundic, spar, and copper, but of the latter not enough to pay for saving. The tribute pitches are looking favourable. We shall have ready for sampling by the latter end of the present month about thirty-five tons of fair quality ore. The proposed trial of the eastern part of Wheal Marquis is progressing tolerably well; the engine-shaft has been made good to the adit level, and the plat is now cutting for renewal of sinking. The stopes at Deloe's Kitchen is sinking with good progress, and is now about nine fathoms from the surface, and in favourable ground.

J. H. HITCHINS.

TAMAR SILVER-LEAD MINING COMPANY.

Oct. 17.—In the 125 fathom level there is an improvement; the lode is now about two feet wide, producing some good work, and also the end is more favourable for driving. In the 115 fathom level the lode is eighteen inches wide, orey and promising. In the 105 fathom level the lode is two feet in width, carrying branches of ore, but not rich. In the ninety-five fathom level the lode is one foot wide, carrying a good branch of ore. In the eighty-five fathom level the lode is small and poor. In the sixty-five fathom level the lode is eighteen inches wide, six inches of which is good saving work. In the fifty-five fathom level the lode is two feet wide, chiefly composed of fluor-spar, intermixed with silver-lead ore. In the forty-five fathom level the lode is also about two feet wide, of just the same quality. We shall sample next week two parcels of silver-lead ore, which we expect will be about seventy-five tons. At the north mine we have completed the lift for drawing water from the river, for giving a better supply to our dressing department, and which, I am glad to say, answers very well.

J. SPRAGUE.

TINCROFT MINING COMPANY.

Oct. 17.—I am glad to inform you that the lode at the seventy-two fathom level, in the south mine, continues to look well, both for copper ore and tin; the men getting fair wages, at 1*s.* 6*d.* tribute. Nothing else in this part of the mine requires noticing. In the north mine the lode in the new engine-shaft continues a good size, with some rich ore in it, but at present is corrupted very much with mundic; similar floors we have passed through above, under which we have found a good lode. The lode in the winze, to the east of the shaft, is about twenty inches wide, worth about 30*l.* per fathom. At the fifty west no lode has been taken down for the last week; ditto east, we are driving on a branch to the east of the cross-course, but so far it has not the appearance of the lode to the west of the cross-course. When we get off the cross-course, in settled ground, we shall cross-cut in quest of another part. The winze in the bottom of the forty west is yielding good work for ore, and worth about 30*l.* per fathom. The lode in the forty is improving for copper ore, worth at present about 10*l.* per fathom. The men at Palmer's have been engaged in the past week planking down the shaft; they will resume opening plat and driving west again to-morrow.

W. PAUL.

FOREIGN MINES.

IMPERIAL BRAZILIAN MINING ASSOCIATION.

By the packet arrived this morning (19th Oct.), the board have only received a missing letter from the chief commissioner, dated 13th June. The following is a copy of the letter from the agents, dated Rio, 12th August:—"Since our last we have only received one of Mr. Crickett's missing letters, dated 13th June, which we enclose. The exchange has again rallied; some business was done at 25½, although 25 may be quoted as the average rate of the transactions by this packet—Government 6 per Cent. Stock is improving, and to-day is quoted at 70. There is no intelligence of any importance from Minas Geraes.

NAYLOR BROTHERS & Co.

BOLANOS MINING COMPANY.

Extract from a letter from the company's agent at Tampico, dated 16th August, 1842:—"We have the honour to wait upon you with the following bill of lading of specie shipped to your address, per steam-packet *Dee*—viz., B C, 1 to 10 (ten bags), containing $20,000.

San Clemente, July 28.—In consequence of the request of the directors of the company to allow the company to have an interest in the mines of San Rafael, equal to what they hold in the other mines, and having, on my part, agreed to this arrangement, I now beg to inform you that the transfer of the said property—viz., three-fourths of the contract, has been made in favour of the Bolanos Company, from the beginning of the present quarter. The whole amount spent in San Rafael up to the end of June, was $23,172 0 5; of this, three-fourths—viz., $17,379 0 3, I have charged to the company, which I hope will meet the approbation of the directors. In future, the treasurer will charge to me monthly my share of the expenses, which will be one-fourth of the whole. The acquisition the company has made being of considerable importance, and requiring serious consideration as to their future operations in this district, I have thought it necessary to have a complete survey made of the ground comprising Loreto, San Rafael, and Veta Bolo, the map of which you will receive inclosed. The scale of this map is somewhat smaller than that of San Clemente, which I sent some months ago, but the difference is not great, and as the ground is adjoining, you may, by putting the maps side by side, form a good idea of the magnitude of the concerns, being about half a league in length from east to west, on what I consider to be the richest mineral ground in this district.

July 30.—I hereby send the estimates for the present quarter, I am sorry they do not present a very brilliant result, but to this the board must have been already prepared by some of my late letters (the result gives a profit to the company of $26,030). No change has taken place in our mines either here or in Bolanos. In this district we are looking with anxiety to the result of some of our works of discovery, and I trust that some one will turn out well enough to enable us to increase our profits.

Aug. 4.—Being on the point of going to Bolanos, for the purpose of carrying into effect the abandonment of the mines of Barranco, and, as the accounts of this district cannot be made up before my departure, I have thought proper to address you now, informing you, at the same time, that my next communication will be sent from Bolanos about the 15th or 20th of the month. By the same opportunity, perhaps, I shall be able to send to the board complete and detailed information respecting the results of the five months elapsed since the new agreement was made with the owners, the stock of ores, probability of recovering debts due to the company, and also what part of the stock may be considered realizable.

Aug. 12.—Mr. Floresi left this place for Bolanos on the 7th instant, and, in compliance with his instructions, I now forward you the monthly accounts, &c., of this negotiation for July. Since Mr. Floresi last wrote you nothing new, deserving particular notice, has occurred in the mines, except in the old mine of El Carmen, where we have, in the present week, discovered some very good ores, assaying from forty to fifty marcs per monton; a few cargas only have yet been broken, and we cannot, therefore, say much about it, further than it has a very promising appearance.

MINE ACCIDENTS.

Rosdeal.—A fatal accident happened a few days since at Rosdeal, near Portosy,; three men, a father and son named J. Smith, and J. Gordon, were at work in a quarry, when a large piece of the rock, about five feet square, fell from the height of eight feet upon Gordon, and killed him on the spot; some time elapsed before the stone could be removed, when it was found that no skin was broken, owing to a quantity of soft sand being below him. J. Smith, jun., was driven over by another stone at the same time, and received a severe bruise, but he is recovering.

Dreadful Boiler Explosion.—We have received several accounts of a most distressing accident at Messrs. Hobbin's iron manufactory, at Middlesbro', from which we gather that on Tuesday morning last, the steam-boiler belonging to the works (which was principally used for making rails) exploded, blowing the roof of the building up, the principal part falling upon the men at work. It appears certain that sad destruction of human life has occurred, but to what extent we are unable to state with certainty, from the evidently exaggerated statements in some of our reports.

CURRENT PRICES OF STOCKS AND SHARES.

The English securities, at the beginning of the week, wore a more cheering appearance, and continued to improve under the influence of the dividends in course of payment, and considerable purchases of Long Annuities and Reduced were made. The prices still continue firm, and on Thursday one purchase was made on account of a leading banking firm, to the extent of 70,000l., which was followed by one or two rather considerable transfers on private account. The fluctuations have been of no consequence, the principle of which are as follows:—3¼ per Cent. Reduced, 100¾ ⅞; 3 per Cent. Consols, 88⅞ ¾; and Consols for Account, 90½ ⅜. Exchequer Bills were done at from 50s. to 55s.—Foreign Stocks have been quoted during the week at rather improved prices, but without any essential improvement in the appearance of business. The following are the fluctuations in this description of investment:—Portuguese 5 per Cents., 30⅞ 3½; ditto 3 per Cents., 22½ 3½; Spanish Actives 16 ⅛; ditto 3 per Cents., 30¼ 1½; Colombian, 20⅞ ¼; Mexican, 31⅛; Dutch 5 per Cents. 100½ ⅜; ditto 2½ per Cents., 57⅞ ¼; Brazilian, 65 4½; Belgian, 103 4; and Peruvian, 15 16.

STOCK EXCHANGE, Saturday morning, Twelve o'clock.

Consols Money, 90⅞ ¾	Dutch, 2½ per Cent., 57⅜ ¾
Ditto Account, 90⅞ ¾	Ditto, 5 per Cent., 100⅜ ¾
New 3¼ per Cents., 101⅛ ⅞	Portuguese, 5 per Cent., 30 ¾
Reduced 3 per Cents., 92½ ⅜	Ditto, 3 per Cent., 23 ¾
Reduced 3¼ per Cents., 100¾ ⅞	Russian, 5 per Cent., 112 13
Long Annuities, 17⅛ ¼	Spanish, Actives, 5 per Cent., 16⅛ ¼
Bank Stock, 164 5	Ditto, 3 per Cent., 31⅛ ¼
Exchequer Bills, 56 58 pm.	Chili, 6 per Cent., 82 4
Belgian Bonds, 5 per Cent., 103¼ 4½	Colombian, 6 per Cent., 20⅞ 1½
Brazil, 5 per Cent., 65¼ 4½	Mexican, 5 per Cent., 32¼ ⅜
Danish, 3 per Cent., 82 3	Peru, 15 16

[From our own correspondents.]

LATEST PRICES OF IRISH STOCKS.—3 per Cent. Consols, 91⅞l. to 92⅛l.; 3½ Stock, 99⅞l.; ditto New, 1838, 100l.; 3½ per Cent. Debentures, 92⅜l.; Bank Stock, 177⅛l.—Kingstown Railway, 8ml.; Dublin and Drogheda, 5l.—Hibernian Bank, 2½l.; Royal Bank, 1½l.; Provincial Bank, 4½l.—City of Dublin Steam Company, 104l.; ditto Stock, 1836, 40¼l.—Steam Ship Building Company, 44½l.; British and Irish ditto, 5½l.—National Insurance Company, 28½l.; Patriotic, 7½l.—Mining Company of Ireland, 12½l.; Wicklow Copper Mines, 11½l.

LEEDS, THURSDAY.—Since our last week's report of the share market some faint glimmerings of improvement are perceptible—at all events, so dark a prospect as was then before us appears to be clearing away. Into what channels of commerce or finance the abundance of money, which is so prevalent, is to take its course remains to be seen; but this is certain, if experience is to guide one's judgment in these matters, that an advance in prices, generally speaking, of goods and shares, must, ere long, inevitably take place. Foreign stocks (so called), as well as American, appear to be altogether "repudiated," and, therefore, where the "plethora" of accumulated capital (for, bad as the times are, capital does at present increase, even in this country) is to find a vent it seems quite difficult to say, except in what we have already alluded to. Nothing has lately attracted so much attention as the shares in the Brighton line, which, during the past fortnight, have advanced from 3¼l. to 27l., and, although they have just received a temporary check in price, we cannot help thinking they will shortly experience another rise; nor should we be at all surprised to see them as high as 4ol. before another month elapses. The present receipts fully justify these anticipations, being all but double of what they were last autumn, about this period, and, should this view turn out to be correctly founded, it would serve very materially to rescue this road from the obloquy which has so long attached to it; and, what would not a little tend to get it in better odour with the public, would be a reduction of the fares—say, the first class to 10s., and the second class to 7s., and also by attaching third class carriages to the trains, at more agreeable times of the day. Look at the falling off in the number of passengers on the Blackwall Railway since the fares have been advanced; if this fact will not convince the directors of railways of the impolicy of high fares, nothing that we can say, or any one else, will convince them. High fares are a relative term, and any fare must be looked upon as too high that allows anything to compete successfully with the rates of railways. But what can be the cause of so large a diminution of passengers on the Northern and Eastern road? It appears that, during the past three months, the number of passengers amounts to 176,000 against 158,000 in the corresponding period of last year, although the line was then unfinished, and now is fully opened. Where is the "screw loose," in this road, for certain it is that a "screw is loose" somewhere? In this line, when it got opened throughout, our confidence at one time was great, but it seems our hopes and expectations are likely to be blasted for a time, although we by no means despair of shortly seeing it in a more prosperous condition. A friend of our's, likely to know, tells us it all arises from want of good management. We hope the new directors will turn over a new leaf, for the benefit of the shareholders, and not let this line experience the fate of so many of the London lines—to wit, the Blackwall at 6l. on 25l. paid, the Croydon at 10l. on 2ol. paid, and, lastly, the Greenwich at 4½l. on 2ol. paid. The committee of the North Midland appears to be at war with the directors, who wish to know in what manner the sweeping reductions are to be carried into effect, but the committee decline to give them information on this subject. We offer no opinion, although we have one, but it strongly reminds us of Sir Robert's plan of objecting to prescribe for the patient, until he was regularly called in, and got the fee! Notwithstanding this, these shares, supported by a continuance of good traffic, are not only firm, but are advancing in price, as we predicted they would three weeks ago—the old shares have reached 56l., and the thirds 18½l. Manchester and Leeds continue to droop at 69l.; Hull and Selby's remain perfectly inanimate, whilst York and North Midlands seem to be growing upwards; Leeds and Selbys are firm at par; and Sheffields and Rotherhams are without demand at 27l. The following are our quotations:—North Midland Railway, 56l.; York and North Midland, 9½l.; Leeds and Selby, 2½l.; Hull and Selby, 31½l.; Great North of England, 9ol.; Manchester and Leeds, 69l.; Sheffield and Rotherham, 27l.; Edinburgh and Glasgow, 4ol.; Bristol and Exeter, 44½l. ex div.; Cheltenham and Great Western, 21l.; Northern and Eastern, 56l.—Leeds Banking Company, 16½l.; Leeds and West Riding, 6l.; Leeds Commercial, 8½l.; Yorkshire District, 7½l.—Leeds and Liverpool Canal, 560l.; Huddersfield, 16½l.; Rochdale, 54l.—Leeds and Yorkshire Assurance Company, 13½l.—Leeds Old Gas Company, 22½l.; Leeds New Gas Company, 26½l.—Leeds Commercial Buildings, 10l. R. S. WATSON & CO.

GLASGOW.—Since the date of last circular (17th ult.) money has continued abundant, and within the last few days a large sum has been thrown upon the English market from the payment of the quarterly dividends on Bank of England stock and Government funds. Considerable purchases have been made for investment in the better class of securities, but there have been few transactions of a speculative character. The accounts from the manufacturing districts are still unsatisfactory, and the exposure of the affairs of the Bank of Manchester is calculated to increase, rather than diminish, the want of confidence existing previously. There has been an active demand during the month for the stocks of the Scotch banks, and a considerable advance in prices has taken place. Royal has risen from 158l. to 161l.; British Linen from 200l. to 208l.; Commercial from 132l. to 134l.; Glasgow Union from 71l. to 82l.; Western from 62l. to 70l.; Clydesdale from 12l. 12s. to 13l.; Eastern from 112l. to 17l.; National from 14l. to 14½l.; Edinburgh and Leith from 33l. to 35l.; City of Glasgow from 7l. to 7l. 5s.; and Glasgow Joint Stock from 7l. 10s. 6d. to 8l. 8s.—There is little alteration to notice in the shares of insurance companies. Clyde Marine has declined 1s., and Scottish Union Insurance 1s. per share, while the Standard Life Company is 1s., and Edinburgh Life is 2s. 6d. higher.—There has been more inquiry for mineral railways. The shares of Monkland and Kirkintilloch and Ballochney are not to be had at the quotations, while those of Wishaw and Coltness are held firmly at 33l. Several purchases have been made of the stock of the Edinburgh and Glasgow Railway, the traffic on which, notwithstanding the lateness of the season, seems to increase rather than to fall off.—Canal shares continue dull of sale.—There have been considerable sales of Glasgow Water at 80l.—Glasgow Gas, which, previous to the appearance of the prospectus of the New Company, sold freely at 52l., is now offered at 32l., without finding buyers.—The following are our quotations for the past week:—Bank of Scotland, 133l.; Royal Bank, 161l.; British Linen Company, 208l.; Commercial, 134l.; Glasgow Union, 82l.—North British Fire and Life Insurance, 12½l.—Ballochney Railway, 80l.; Dundee and Arbroath, 17l.; Edinburgh and Glasgow, 40½l.; Garnkirk and Glasgow, 32½l.; Glasgow and Greenock, 16l.; Glasgow, Paisley, Kilmarnock, and Ayr, 51l.; Monkland and Kirkintilloch, 52l.; Slamannan, 12l.; Wishaw and Coltness, 33l.—Royal Exchange, 42l.—Old Clyde Shipping Company, 5l.—Shott's Iron Company, 3l.

EDINBURGH, THURSDAY.—Edinburgh and Glasgow Railway, 40½l.; Dalkeith and Edinburgh, 3l.; Glasgow and Greenock, 16l.; Glasgow and Garnkirk, 32l.; Glasgow and Ayrshire, 51l.; Wishaw and Coltness, 33l.; Dundee and Arbroath, 17l.; Arbroath and Forfar, 1l.—Bank of Scotland, 133l.; Royal Bank, 161l.; British Linen Company, 208l.; Commercial, 134l.; National, 14l.; Edinburgh and Leith, 35l.; Glasgow Union, 82l.; Western Bank of Scotland, 71l.; City of Glasgow, 7l.—Caledonian Fire and Life Insurance, 2½l.; Hercules Fire, 12½l.; North British Fire and Life, 12½l.; Standard Life, 4l.—Edinburgh Gas, 26l.; Edinburgh and Leith Gas, 20l.—Forth and Clyde Canal, 14ol.

HULL, THURSDAY.—London and Brighton is the stock most in demand, and there is a large business passing in it. Capitalists are endeavouring to effect at the depressed rates, but their operations are very [illegible] a limited extent.—Birmingham and Derby, 3ol. to 32l.; Eastern Counties, 8½l.; Edinburgh and Glasgow, 4ol.; Grand Junction, 18½l.; Hull and Selby, 31½l. to 32l.; Lancaster and Preston, 22½l.; Leeds and Selby, 1ool.; Liverpool and Manchester, 152l.; London and Birmingham, 186l.; London and Brighton, 26½l.; London and South Western, 61½l.; Manchester and Birmingham, 21½l.; Manchester and Leeds, 70l.; Midland Counties, 6ol.; Newcastle and Carlisle, 82l.; North Midland, 54½l.; Sheffield and Rotherham, 27l.; South Eastern and Dover, 22½l.; York and North Midland, 1ol.—Yorkshire District Bank, 6l.; Sunderland Joint Stock, 22l.—Hull Dock, 135l.—Hull Gas, 2ol.—Hull Marine Insurance, 11l.

BRISTOL, FRIDAY.—Our market presents no feature worthy of comment, further than that it continues firm at the undermentioned quotations, buyers predominating, and but little stock offering:—Great Western Railway, 82½l. to 83l.; ditto, halves, 5ol. to 51l.; ditto, fifths, 21l. to 22l.; Bristol and Exeter, 44l. to 45l.; Bristol and Gloucester, 1ol. to 1ol.; Birmingham and Gloucester, 4ol. to 4ol.; Birmingham and Derby, 3l. to 3l.; Cheltenham Union, 2ol. to 21l.; Taff Vale, 3ol. to 31l.; London and Brighton, 26l. to 27l.; Eastern Counties, 8l. to 8½l.—Bristol Gas Company, 32½l. to 33l.; Clifton, 2ol. to 21l.

MANCHESTER, THURSDAY.—Birmingham and Derby Railway, 3ol.; Birmingham and Gloucester, 4ol.; Manchester and Birmingham, 21½l.; Manchester, Bolton, and Bury, 32½l.; Manchester and Leeds, 69l.; Midland Counties, 6ol.; North Midland (Leeds to Derby), 57½l.; Sheffield and Manchester, 5½l.; York and North Midland, 9½l.—Manchester and Liverpool District Bank, 10½l.; Manchester and Salford, 16l.; Union of Manchester, 5½l.—Manchester Fire and Life Assurance Company, 4½l.—Union Plate Glass Co., 5l.

LIVERPOOL, FRIDAY.—Chester and Birkenhead Railway, 30l.; Eastern Counties, 8½l.; Edinburgh and Glasgow, 40½l.; Grand Junction, 17ol.; Great Western, 82l.; Great North of England, 11ol.; Lancaster and Preston, 22½l.; Liverpool and Manchester, 152l.; London and Birmingham, 11l.; London and South Western, 61½l.; London and Brighton, 26½l.; Manchester, Bolton, and Bury, 32½l.; Manchester and Birmingham, 21l.; Manchester and Leeds, 70l.; Midland Counties, 6ol.; North Midland, 56l.; North Union, 40½l.; Paris and Rouen, 12½l.; Sheffield and Rotherham, 27l.; York and North Midland, 9l.—Borough Bank, 10½l.; Bank of Liverpool, 25l.; Bank of Manchester, —; Commercial, 17½l.; Liverpool Banking Company, 6l.; Manchester and Liverpool District, 10½l.; North and South Wales, [illegible]

4½l.; Royal, 70½l.; Union, 10l.; Wilts and Dorset, 7½l.—Fire and Life Assurance, 2½l.; Marine Assurance, 4½l.—Anderton Carrying Company, 6½l.—Polzeath's Birkenhead Company, 1l.—Gas-Light Company, 2½l.; New Gas and Coke Company, 10½l.—Harrington Dock, 57l.—Bootle Water-Works, 31l.; Liverpool and Harrington Water-Works, 61½l.

SALE OF COPPER ORES IN CORNWALL.

Sampled Oct. 5, and Sold at Andrew's Hotel, Redruth, Oct. 20.

Mines.	Tons.	Price.	Purchasers.	Mines.	Tons.	Price.	Purchasers.
Treasvean	117	£5 14 0	Williams.	Fowey C.	74	£6 17 0	Freemans.
ditto	109	5 5 6	P. Grenfells.	Holmbush	107	13 10 6	Vivians.
ditto	36	4 15 0	Williams.	ditto	103	6 17 0	Freemans.
ditto	62	4 17 0	Nevill & Co.	W. Gorland	74	6 12 6	—
ditto	63	4 9 6	—	ditto	42	2 12 0	P. Grenfells.
ditto	44	4 0 6	—	ditto	18	10 5 6	Mines Royal
P. Consols	162	6 17 6	Vivians.	Charlestown	67	7 9 6	Vivians.
ditto	97	6 3 0	—	ditto	13	21 16 0	Williams.
ditto	59	6 16 6	P. Grenfells.	Gt. W. Char.	19	2 3 6	P. Grenfells.
ditto	46	7 15 0	Vivians.	ditto	2	2 9 6	Freemans.
ditto	29	24 15 0	Williams.	U. Wood	19	5 6 0	Nevill & Co.
Fowey C.	90	7 15 6	Freemans.	Cliff Downs	19	3 9 6	Freemans.
ditto	67	4 14 0	Nevill & Co.	Wm.'s ore	15	3 1 0	P. Grenfells.

TOTAL PRODUCE.

Treasvean	512	£2965 14 0	Charlestown U.	80	£784 4 6
Par Consols	357	2715 1 6	Gt. Wh. Charlotte	20	45 18 0
Fowey Consols	231	1615 11 0	Wh. Unity Wood	19	100 14 0
Holmbush	207	2122 3 6	Cliff Downs	19	66 0 6
Wh. Gorland	128	629 7 0	Williams's Ore	15	45 15 0

Average standard, 106l. 12s.—Average produce, 9.—Average price, 6l. 17s. 6d.—Quantity of ore, 1606 tons.—Quantity of fine copper, 144 tons 15 cwt.—Amount of money, 11,079l. 2s. 6d.—Average standard of last sale, 110l. 12s.—Average produce, 8½.

COMPANIES BY WHOM THE ORES WERE PURCHASED.

	Tons.	Amount.
Mines Royal Company	19	£191 10 0
Vivian and Sons	413	3355 16 0
Freeman and Co.	359	2451 0 6
P. Grenfell and Sons	274	1712 2 6
Sims, Willyams, Neville, Druce, and Co.	286	1550 8 6
Williams, Foster, and Co.	254	2009 6 0
Total	1606	£11,079 5 6

Copper ores for sale on Thursday next, at Farquharson's Hotel, Truro.—Mines and Parcels.—United Mines, 1270; South Caradon, 500; Tretheilan, 350; North Downs, 250; Treasvean, 141; Fowey Consols, 290; Treiseigh Consols, 155; Tregothnan Consols, 71.—Total, 2929 tons.

Copper ores for sale on Thursday week, at Andrew's Hotel, Redruth.—Mines and Parcels.—North Roskear, 810; Consolidated Mines, 767; South Roskear, &c., 378; Dolcoath, 331; East Wheal Crofty, 329; South Wheal Basset, 229; Par Consols, 275; Wheal Trewavas, 274; United Hills, 256; Halenbeagle, 241; Fowey Consols, 292; East Pool, 176; Tretoil, 140; Wheal Harriet, 95; Tregollan, 51; Wheal Harmony, 20.—Total, 4674 tons.

SALE OF COPPER ORES AT SWANSEA.

Sampled September 28, and sold on the 19th of October.

Mines	Tons	Produce	Standard	Price	Mines	Tons	Produce	Standard	Price
Cobre	109	13	99¼	10 15 6	Santiago	75	15¼	90¼	13 7 0
ditto	89	13¼	99	10 14 6	Chili	100	21¼	94	17 14 6
ditto	77	12¾	100	10 12 6	ditto	44	21¾	94¾	18 5 0
ditto	76	22¾	93½	18 10 0	ditto	38	20¾	95¼	17 2 6
ditto	66	13	97¼	10 15 6	Cuba	65	16¾	95¼	13 0 0
Knockmahon	102	9¼	104¼	7 0 0	ditto	33	16¾	95¼	13 0 0
ditto	79	9¾	107	6 14 0	ditto	15	6¼	111	4 11 0
ditto	75	6¾	113	4 19 0	Copiapo	107	25¼	97¼	21 5 0
ditto	61	12¾	100	10 12 6	Bearhaven	84	10¾	102¼	9 4 0
ditto	51	10¾	102¼	8 17 0	Connorree	47	4¾	124¼	3 7 0
Santiago	60	23¾	94	19 17 0	ditto	6	22¾	99¼	17 10 0
ditto	62	23¾	94¼	19 14 0	Eagle	10	18¾	90¼	15 12 6
ditto	61	20¾	93¾	[illegible] 5 0	Gloucestershire	5	13¾	90	10 14 6
ditto	59	25	93¾	20 17 0	Copiapo	7	22¾	91¾	18 7 6

Total tons, 1665.—Total amount, £21,553 1 6.

TOTAL PRODUCE.

Cobre	408	£4373 1 0	Bearhaven	84	£780 16 0
Knockmahon	371	2767 19 6	Connorree	47	279 19 0
Santiago	277	5434 7 0	Eagle	10	156 5 0
Chili	182	3228 5 0	Gloucestershire	5	53 12 6
Cuba	113	1391 9 0	Copiapo	7	128 12 6
Copiapo	107	2273 15 0			

COMPANIES BY WHOM THE ORES WERE PURCHASED.

	Tons.	Amount.
English Copper Company	[illegible]	£[illegible] 12 6
Freeman and Co.	[illegible]	[illegible]
Grenfell and Sons	[illegible]	[illegible]
Sims, Willyams, Neville, Druce, and Co.	[illegible]	[illegible]
Vivian and Sons	[illegible]	[illegible]
Williams, Foster, and Co.	[illegible]	[illegible]
Total	1665	£21,553 1 6

Copper ores for sale on the 26th [illegible]:—Chili 1[illegible], ditto 100, ditto 100, ditto 91, ditto 84, ditto 59—Knockmahon 104, ditto 80, ditto [illegible], ditto 50, ditto 44, ditto 31, ditto 27—Bearhaven 100, ditto 110, ditto 77, [illegible] 72—Copiapo 100, ditto 95—Phoenix 70—American 40, ditto 29—Santiago 70—[illegible] 38—Cuba 10, ditto 3—Copiapo 100.—Total, 1909 tons.

LATEST CURRENT PRICES OF METALS.

LONDON, OCTOBER 21, 1842.

		£ s. d.				£ s. d.
SPELTER—Foreign, [illegible]		0 0 0	COPPER—Old	per lb.		0 0 9
For delivery		28 10 0	" Cake	p. ton	0 0 0 to	87 0 0
ZINC—English sheet		43 0 0 40 0 0	" For. cake		0 0 0 to	84 10 0
QUICKSILVER	per lb.	0 4 0	" tile		0 0 0 to	84 0 0
IRON—English bar, &c.	p. ton	5 15 0	TIN—English, blocks, &c.	cwt.		3 6 0
" Nail rods		6 15 0	" bars			3 8 0
" Hoops		7 15 0	Foreign, Banca			3 8 0
" Sheets		0 0 0	" Straits		3 1 0	3 5 0
" Cargo in Wales		5 2 6	" Peruvian		2 0 0	2 14 0
" Pig, No. 1, Wales		3 15 0	Tin plates, No. 1	p. box	1 4 0	1 10 0
" No. 1, Clyde		0 0 0	[illegible]		1 12 0	1 16 0
" For., Swedish		11 0 0	[illegible] box less			
" Russian, CCND		[illegible]	[illegible]	p. ton		16 5 0
" " PSI		[illegible]	[illegible]			22 0 0
" Gourieff		[illegible]	[illegible]			22 0 0
" Archangel		[illegible]	[illegible]			24 0 0
[illegible]	p. ton	[illegible]	LEAD—English		17 0 0	17 10 0
[illegible]		[illegible]	" Spanish			[illegible]
[illegible]		[illegible]	" American		0 0 0	17 5 0

EXPORTS OF GOLD AND SILVER.—By [illegible] are published by [illegible] the export of the precious metals from London to foreign and colonial ports for the week ending Thursday last [illegible]:—

Silver [illegible] Hamburgh .... 2,000 ounces.

Calcutta .... 1,730 "

[From the Midland Counties Herald of Thursday.]

The [illegible] for metals has been exceedingly depressed: British iron, in cargoes, in W[illegible] having [illegible] to 10s. per ton below the recent unprofitable rates.—Sales [illegible] of spelter [illegible] been made at 22l. per ton; and East India tin at 60s. per cwt.

[From the Morning Chronicle of yesterday.]

Several large sales of foreign spelter to speculators, both on the spot, and for spring deliveries, are reported, and the price is nominally 22l. 5s. By exporters and consumers nothing has been done—indeed, from the rapid substitution of British spelter for the foreign, in most branches of manufacture, consumers will soon conduct their purchases wholly to the British, which, considering it can be produced at a profit of 2ol. per ton, will always prove the means of baffling the hopes of the speculators in this article. British bar iron is again easier, and some sales for India have been made at 5l. 10s. per ton, free on board in London, while for deliveries at the works the demand continues very slight. East India tin sold to-day at public sale at 61s. 6d. to 62s. for fine Straits, to the extent of 300 slabs, and the 2000 slabs taken in on the 12th instant have been subsequently disposed of at 60s. to 62s., according to quality. British pig lead remains very dull, and is severely experiencing the competition of the American, of which 3000 pigs more have arrived at Liverpool. In other articles no change.

[From the Morning Chronicle of this day.]

Fifty tons of spelter are reported to have been sold to-day to the speculators at 22l. 10s. per ton.—About twenty tons of Swedish steel have been taken for India at 17l. 10s. per ton for the ¾-inch, and at 18l. 10s. for the ½ and ¼-inch.—Of quicksilver some large parcels are now under shipment to St. Petersburgh.

COAL MARKET, LONDON.

MONDAY.—Prices of coals per ton at the close of the market:—Beddle's West Hartley 17—Chester Main 19 3—Nelson's West Hartley 17—Ord's Redbeugh 15 6—Pontop Windsor 14 6—Tanfield Moor 15 6—Townley 14 6—West Wylam 15 6—Wall's End Cosmal 14 6—Bailey 19 6—Hasper 17 3—Beddle's 19 6—Belmont 19 6—Hazwell 21 6—Hetton 21 3 to 22 0—Lambton 21 6—Russell's Hetton 21 3—Stewart's 21 3—Shincliffe 20—Adelaide 21 3—Brown's Dinsdale 20 3—Evenwood 19—Seymour Tees 19 3—Sunderland 20—Clarges 17 6—Caruel Moor 16—Hartley 17 6—Powell's Duffryn Steam Coal 20.—Ships arrived, 18.

WEDNESDAY.—Adair's Main 13 6—Cowe's Hartley 14—Holywell Main 17—New Tanfield 14 6—Old Tanfield 15 6—Ord's Redbeugh 14 6—Pontop Stanhope 14 6—Pontop Windsor 15—Townley 14 6—Wylam 15 6—Wall's End Cosmal 14 6—Bell 19 6—Bray 19 6—Killingworth 19 3—Braddyll's Hetton 20—Hetton 21 6—Lambton 21 3 to 21 6—Stewart's 22—Cassop 21 3—Adelaide 21 3—Evenwood 19—Gordon 18 3—Seymour Tees 20—Tees 21 3—Caruel Moor 16—Wemyss 14.—Ships arrived, 15.

FRIDAY.—Adair's Main 13 6—Beddle's West Hartley 17 6—Chester Main 19 6—Holywell Main 17 6—New Tanfield 15—Old Tanfield 15—Ord's Redbeugh 15 6—Ravensworth's West Hartley 17—Tanfield Moor 15 6—Townley 15—Wylam 15 6—Wall's End Clark and Co. 19 6—Hetton 19 6—Whitworth 20—Belmont 20 6—Braddyll's Hetton 21 3—East Hetton 19 6—Haswell 21 6—Hetton 21 6 to 22—Lambton 21 6 to 21 9—Plumberton 20—Russell's Hetton 21 6—Stewart's 22—Shincliffe 20—Cassop 20—Hartlepool 21 6—Heugh Hall 21—Kelloe 21 6—Cowpen Tees 20—Evenwood 19—South Durham 19 3—Tees 21 3—West Hetton 19 6—Lyonsdale 19—Ships arrived since last market day, 84.

PRICES OF MINING SHARES.

There has been no transactions in British Mine shares reported this week. A little more business, however, has been done in Foreign Mine shares, and that at advanced prices—Bolanos being now 5¼ and scrip 5½; Imperial Brazilian have advanced 2l. per share, the last quotation being 12; Registered Real del Monte were done at 1½; Unregistered ditto, 2¼; and Loan Notes at 50, being an advance upon the two latter. The continued importation of ore from the Santiago Mines appears to encourage the markets, the latest quotation for those shares being 36; St. John del Rey advanced ½, the last price being 3. Other shares remain without alteration.

Shares.	BRITISH MINES. Company.	Paid.	Price
500	Anglesey	5	—
4,000	Bedford	3	1½ ¾
4,000	Bisson Bridge	5	—
100	Botallack	175	300
10,000	British Iron	70	6 dis
8,000	Blaenavon	50	11½
120	Brewer	—	60
70	Budnick	—	20
1,000	Carn Brea	—	120
5,000	Con. Tretoil Mining Ass.	4	¾ 1
2,000	Cornubian Lead Co.	2	2
5,000	Cornwall Great United	10½	1
512	Cook's Kitchen	—	30
112	Charlestown	—	450
120	Cregg Brawse	40	330
128	Cosheen	15	75
10,000	Durham County Coal Co.	37	9
200	Diamond	5	6
128	East Pool	—	240
100	Great Consols	97	650
10,000	Hibernian	12½	2½
1,000	Holmbush	14	4½
2,000	Isle of Sark (Guernsey)	11	8
80	Levant	—	450
20,000	Mining Co. of Ireland	7	13½
128	Mostyn Mines	100	—
70	North Roskear	—	300
3,000	Polberou Consols	10	¾
10,000	Rhymney Iron	50	10½
100	Rosewall Hill	100	160
128	South Caradon	—	1000
900	South Towan	10	1
64	South Wheal Basset	—	300
87	Speam Moor	70	100
4,000	Tregollan	4½	¾
4,000	Treleigh Consols	5	1½
6,000	Tamar Consols	3	2½

Shares.	BRITISH MINES—continued. Company.	Paid.	Price
6,000	Tin Croft	7	8
128	Trewavas	—	120
170	Treviskey and Barrier	—	130
96	Treasvean	—	150
120	Tretheilan	—	100
4,000	United Hills	5	8½
6,000	Wicklow Copper	5	15
3,043	West Wheal Jewel	10	6½
120	West Tretheilan	75	75
53	Wheal Vor	500	300
1,000	West Carbery	15	12
	FOREIGN MINES.		
5,000	Alten Mining Company	13¼	8
10,000	Anglo Mexican Co.	100	7
3,374	Do. Subscription	20	2½
2,000	Bolanos	150	5¼
	Ditto Scrip	15	5½
10,000	Brazilian Imperial	21	12
10,000	Bolivar	20	¾
10,000	Ditto Scrip	10	2
10,000	Cata Branca } Brazilian	6¼	—
10,000	Conceicao } Co.	4	—
12,000	Cobre Copper Company	40	29
8,500	Colombian Co. regis.	55	2
10,000	Copiapo Mining Co.	13½	6½
20,000	General Mining Asso.	20	4
5,351	Mexican Company	30¼	1
12,000	Mocambas and Cocaes	25	4½
14,382	{ Real del Monte, regis.	63½	1½
	{ Do. unregistered	—	2¼
	Ditto Loan Notes	130	50
7,000	Royal Santiago	10	36
11,000	St. John d'el Rey	15	3
20,000	United Mexican	40	1½
	Black Scrip, addl. capital	5	1½
	Red New Scrip	2½	2½

RAILWAY SHARE LIST AND TRAFFIC RETURNS.

The transactions in railway shares have been rather extensive, and the market has a more healthy appearance, all the business done, with the exception of that of the shares of those unfortunate concerns, the London and Blackwall and London and Greenwich Railways, which have again declined, having been at an advance upon last week's quotations. The closing prices are given below. The result of the meeting of the shareholders of the West London Railway Company, held yesterday, may be considered as satisfactory, the confirmation of the resolutions creating the new capital having been carried, with only a trifling opposition on the part of a Mr. White and his son, the former of whom professed himself to be in favour of the omnibuses on this road (why did he become a shareholder in this railway?), and did his best to prevent the plan of resuscitating the railway being put in operation, but himself and Mr. White, jun., were alone in their opposition, and the resolutions were carried with the consent of every other shareholder in the room, independently of proxies the chairman had received in favour of the proposed plan, from proprietors holding, in the aggregate, upwards of 18,000 shares. The election of four active gentlemen to the post of directors was hailed by the proprietors with much satisfaction. A question was raised, and not for the first time, as to what right the ex-directors had to claim their pay for the time that the whole affair was lying dormant, and when it was shown by the books that their attendance did not exceed three or four times in the course of the year? Mr. Garland very properly refused to recognise their right to remuneration where no services had been rendered, and declared his intention of constantly opposing any grant to them. Another meeting of the proprietors of the Clarence Railway was held on Saturday last at Stockton-upon-Tees, the result of which was satisfactory, inasmuch as 9,000l. was subscribed for, in addition to the 40,000l. raised at the meeting held in London last week, and there seems but little doubt that the sale of the line will be prevented, by the sum required being paid to the Loan Commissioners.

	Entire Lgth.	Now Open.	Present actual cost.	Pd. on Share.	Val. of Share.	Last week's Returns.
Arbroath and Forfar Railway	15	15	£131,645	25	22	—
Birmingham and Derby Junc.	48	38¼	855,044	100	42	1317 [illegible]
Birmingham and Gloucester	57¼	51	1,013,723	100	41	2677 [illegible]
Brandling Junction	25	25	437,594	45	—	673 13 [illegible]
Chester and Birkenhead	14½	14½	456,664	50	30	612 [illegible]
Dublin and Kingstown	6	6	381,288	100	27½	798 15 [illegible]
Dundee and Arbroath	16¾	16¾	134,984	25	20	373 2 [illegible]
Eastern Counties*	126¼	17¾	1,476,170	23	8½	1036 3 [illegible]
Edinburgh and Glasgow	46	46	1,233,234	50	40½	2149 13 [illegible]
Glasgow and Ayr	51	40	680,345	45	40	1080 11 [illegible]
Glasgow and Paisley Joint	22½	22½	300,000	25	25	782 19 [illegible]
Gd. Junc. & Chester & Crewe	115¼	115¼	2,192,047	100	172	7294 [illegible]
Great North of England	75	45	1,900,000	100	82½	1467 10 [illegible]
Great Western	118	118	6,288,044	65	80	13094 12 [illegible]
Hayle	18	18	125,000	100	—	233 0 [illegible]
Hull and Selby	31	31	460,000	50	31½	1290 17 [illegible]
Lancaster & Preston Junc.	20¼	20¼	300,000	42½	22½	—
Liverpool and Manchester	31	31	1,410,000	100	155	4778 [illegible]
London and Birmingham	112¼	112¼	5,724,007	90	186	15899 17 [illegible]
London and Blackwall	3½	3½	907,000	20	5¾	593 [illegible]
London and Brighton	46	46½	2,000,000	50	26¾	4545 15 [illegible]
London and Croydon	10½	10½	557,202	13½	10	397 17 [illegible]
London and Greenwich	3¾	3¾	793,266	20	4½	678 16 [illegible]
London and South Western	93	77	2,286,837	39½	57½	6441 19 [illegible]
Manchester, Bolton, & Bury	10	10	779,398	95	30	580 14 [illegible]
Manchester & Birmingham	45	8	1,106,812	40	19¼	2537 [illegible]
Manchester and Leeds	50	50	2,535,000	70	70	3019 12 [illegible]
Midland Counties	57	57	1,440,000	100	61½	3003 18 [illegible]
Newcastle and Carlisle	60¼	60¼	730,000	100	90	1426 13 [illegible]
Newcastle and N. Shields	7	7	212,077	50	44	331 1 [illegible]
Northern and Eastern†	32¾	15¼	850,915	40	35¼	1400 12 [illegible]
North Midland	72¾	72¾	2,979,037	100	56¼	4381 3 [illegible]
North Union	23	23	580,000	75	73¼	1049 7 [illegible]
Preston and Wyre	15¼	15¼	270,000	50	30	182 6 [illegible]
Sheffield and Manchester	40	7	251,327	92¼	—	385 11 [illegible]
South Eastern	67	40	1,673,466	50	22½	1439 9 [illegible]
Taff Vale	30	30	539,728	100	—	605 6 [illegible]
Ulster	25	9	225,149	22½	—	487 16 [illegible]
York and North Midland	32	23	446,500	50	90	1894 17 [illegible]

* Including Northern and Eastern Railway toll. † Rent and toll to Eastern Counties (about 150l. per week) included in the returns. ‡ The Liverpool and Manchester toll is deducted.

JOINT-STOCK BANKS.

The amount of business done in this description of security has not been of any extent, or of such a nature as to require especial notice, if we except a sale of shares of the Bank of Ceylon Stock at par. The progress of this bank, which has been established little more than twelve months, must be highly satisfactory, not only to the shareholders, but to its supporters in Ceylon, who will feel the effect of its establishment in the most beneficial manner. The fact that, on a capital already subscribed, amounting to 73,875l., a profit for the year of 6,000l. has been realised, and so short a time from its first establishment, is sufficient to place their corporation on the list of those fortunate undertakings which have returned a handsome profit to the spirited subscribers. The contrast offered by the unfortunately badly managed concern, the Bank of Manchester, is most deplorable; and notwithstanding that the directors acknowledge the mischief they have done by placing too much confidence in the absent-without-leave manager, yet a more substantial acknowledgment of the neglect of the directors should not go without an exemplary punishment. The loss to the proprietors occasioned, as the directors themselves admit, by their own negligence, amounts to no less than 600,000l. By a paragraph which appears in another column, it seems that the directors in the unfortunate Northern Bank are to bear a very large portion of the loss—why should it not be the same with the directors of the Bank of Manchester?

Shares.	Company.	Paid.	Price	Shares.	Company.	Paid.	Price
12,000	Australasia	40	52	20,000	Liverpool Borough	10	[illegible]
20,000	Birmingham	10	10	25,000	Ditto Bank of	12½	[illegible]
20,000	British N. American	40	35	12,000	Ditto Banking Co.	10	[illegible]
10,000	Chatham & Gloucester	5	6	20,000	Ditto Commercial	10	[illegible]
100,000	Commercial of Eng.	5	—	2,000	Ditto Royal	100	[illegible]
1,000	Commerc. of London	200	175	100,000	Manch. & Liver. Dis.	12	[illegible]
20,000	Colonial	25	20	100,000	Manchester	10	[illegible]
50,000	East of England	10	7½	20,000	Manchester & Salford	20	[illegible]
10,000	Gloucestershire	10	20	50,000	National of Ireland	17½	[illegible]
4,000	Ionian	25	25	17,000	Natl. Provl. England	35	[illegible]
20,000	Leeds Banking Co.	10	10	40,000	North & South Wales	10	[illegible]
30,000	Leeds & West Riding	6	10	20,000	Provincial of Ireland	25	[illegible]
20,000	London & Westminster	20	21½	10,000	South Lancashire	7½	[illegible]
60,000	London Joint-Stock	10	11	20,000	W. of Eng. & S. Wales Dis.	12½	[illegible]
20,000	London and County	10	8	20,000	Union of Australia	25	[illegible]
10,000	Liverpool Albion	25	24¼	60,000	Union of London	10	[illegible]

MISCELLANEOUS.

The only sale that has been effected in this description of security has been in Royal Mail Packet Company's shares, which was sold at 9 4s.—a slight falling off, the last quotation having been 14.

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